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# Body Image Projective Test[1]

VALERIE V. HUNT AND MARY ELLEN WEBER
University of California, Los Angeles

The purpose of this study was to investigate a dimension of body image, as primarily oriented to visual perceptions of height, conformation and proportions of the body. The assumptions were: people have a conceptual body image which is both conscious and unconscious; much of the body image concept is anchored in the visual percepts about the conformation of the person's own body; unconscious aspects of a body image may be important since these are emotionally oriented.

The problem was to develop a body image projective test for young women and to explore the relationship of data from this test with data obtained through an objective rating scale. The Body Image Projective Test was based upon the following criteria: (1) ease of administration to large groups and subject to machine tabulation, (2) manual dexterity or drawing skill not required, (3) element of free choice presented yet objectivity of forced choice maintained, (4) purpose of test concealed from subjects so that choices reflect unconscious aspects of body image. The Objective Rating Scale was based upon the same factors of height, conformation and body proportion as in the Body Image Projective Test.

The procedure was to administer both the Body Image Projective Test and the Objective Rating Scale to the same subjects, (1) to determine the reliability of each test, and, (2) to correlate the data of the two tests to determine whether these measured the identified aspects of the body image.

[1]Research Grant, Research Committee, Academic Senate, University of California, Los Angeles, California.

*Body Image Concept*

The disciplines of psychology, neurology and psychiatry recognize the role of body attitudes and feelings in behavior and in personality. Evidence from clinical and experimental investigations has given structure to the theoretical construct, the body image. From the sensations of the body and the perceptions concerning the body which result from the experiences of living, body image is developed and modified by the value system of a society. Savage (1955), Schilder (1935), Hammer (1958). Images are not isolated unrelated pictures but become organized into a gestalt for each person that distinguishes and unites the inner and outer world. Bender (1952). Although the picture one holds of his body develops and integrates in stages, it is never static. It changes as the result of new experience. Head (1920), Schilder (1951). In time, the body image becomes selective of experiences and within experiences in a direction which complements the image. Schilder (1935). The person's concept of his body affects his opinions of his personality and his relations with others. Garrett (1945), Schilder (1935).

"The body image is a term which refers to the body as a psychological experience, and focuses on the individual's feelings and attitudes toward his own body. It is concerned with the subjective experiences with his body and the manner in which he has organized these experiences." Fisher (1958).

*Body Image Evaluation*

While the major problem in human sciences is to prove what is thought to be true, the evaluation of concepts is particularly perplexing. Hammer (1958). Methods currently

used to determine the concept of body image encompass clinical observation; human figure drawing, identification, and selection tests; word association tests; and other projective techniques.

The human figure drawing tests or the Draw-A-Person Test have been widely used with children to obtain the projection of their own images. Machover (1949). Goiten and Brown added another dimension with the instruction to draw your figure, your body in outline in space as viewed from the back and the side, feeling your way around the body with both hands. Brown (1943). Tait and Ascher sought to get at other qualitative aspects of a body image by Inside-of-the-Body Test in which the person was asked to draw an inside view of the body and label the organs. Tait (1955). A direct approach to the meaning of parts of the body in the total body scheme was taken by Katcher and Levin. Children were instructed to associate silhouette parts of the body with their parents. Katcher (1955). Deno took black and white nude back view body silhouette pictures of adolescent boys in the same class. Each boy was later asked to identify his own picture and those of the other boys. Deno (1953). While using distorting lenses adults were asked to determine the degree and areas of the body distorted in themselves, in other adults, children and amputees. Wittreich (1955). Bender sought to determine the value of parts of the body by simultaneously facing a person with two different parts of the body and questioning as to relative value. Bender (1952).

Secord attempted to discover the degree or intensity of concern about body parts by requesting that persons associate with words selected as having some relationship to parts or functions of the body. Secord (1953). Value judgments concerning body parts and physical capacities were studied by Curran and Levine through a questionnaire of ninety-six questions developed from the writings of Schilder. Curran (1942). Fisher and Cleveland sought to measure the degree of definiteness of body image boundaries by developing a word association test. Responses were categorized as to barrier and penetration of boundary responses relating to the surface of the body. Findings were correlated with responses from the Rorschach, TAT, and figure drawing tests. Fisher (1958). Numerous writers have commented about body image from the analysis of responses from the TAT, Rorschach, and House-Tree-Person projective tests. Fisher (1957).

Each of these tests was devised to obtain specific information concerning some aspect of the body image. No one test purports to examine the total image. The value of tests which are based upon drawing the human figure may be limited by the drawing proficiency of the subject, Woods (1954), by the judgment of the examiner, and by the validity of criteria for judgment. Projective test responses probably give qualitative data concerning an individual body image concept, but the responses are valuable only as interpreted by an expert. Drawing tests are more useful with children than adults because adults are more hesitant apparently to draw unless they have skill. Hammer believes that other projective techniques are more useful with adults since they have more sophisticated defense layers concealing their basic needs. Hammer (1958).

No tests were discovered in which the stimulus was visually oriented that did not require drawing skill or in which an intensity of feeling about the body schema could be numerically scored that did not require expert judgment, which could be administered to large groups, and which could be standardized and norms determined.

### *Design of Body Image Projective Test*

A nude female anterior silhouette of average height and average body contour was prepared. This "normal

silhouette" was declared as 5′5″ in height. From the proportions of the "normal silhouette" a second silhouette was drawn and scaled to a tall silhouette of 5′9″ in height with average contour, and a third silhouette was drawn and scaled to a short silhouette of 5′1″ in height with average contour. Using the short and tall silhouette models, four more silhouettes were drawn; two, in which the body contour was thick and two, in which the body contour was thin. There were seven original anterior drawings: a normal height, normal contour; a tall height, normal contour; a short height, normal contour; a tall height, thin contour; a tall height, thick contour; a short height, thin contour; and a short height, thick contour. Each of these seven original anterior silhouettes were subsected into parts composed of arms, torso, and hips-legs. At random the parts were recombined into every possible combination to provide 73 new silhouettes plus the original 7 silhouettes for a total of 80 silhouettes.

Four anterior silhouettes were then selected at random and placed upon one page. If the same length and contour of a single area appeared more than twice on any page another random selection was made. In the final form, each page of four pictures contained no more than two of the same length and contour of any single area. Each page was duplicated once and the pages were assigned numbers at random so that the one duplicate was separated by at least twenty pages from the other duplicate.

A nude female lateral silhouette of average height and average body contour was drawn. From this "normal silhouette" view two additional silhouettes were drawn: one, in which the contour was thick; and one, in which the contour was thin; height was held at 5′5″. Three original lateral drawings were prepared; a normal height, normal contour; a normal height, thick contour; and a normal height, thin contour. Each of these original lateral drawings was subsected into parts comprised of shoulders, breasts, abdomen, and hips-legs. The parts were recombined at random into every possible combination to provide 81 silhouettes in addition to the three original silhouettes for a total of 84 silhouettes.

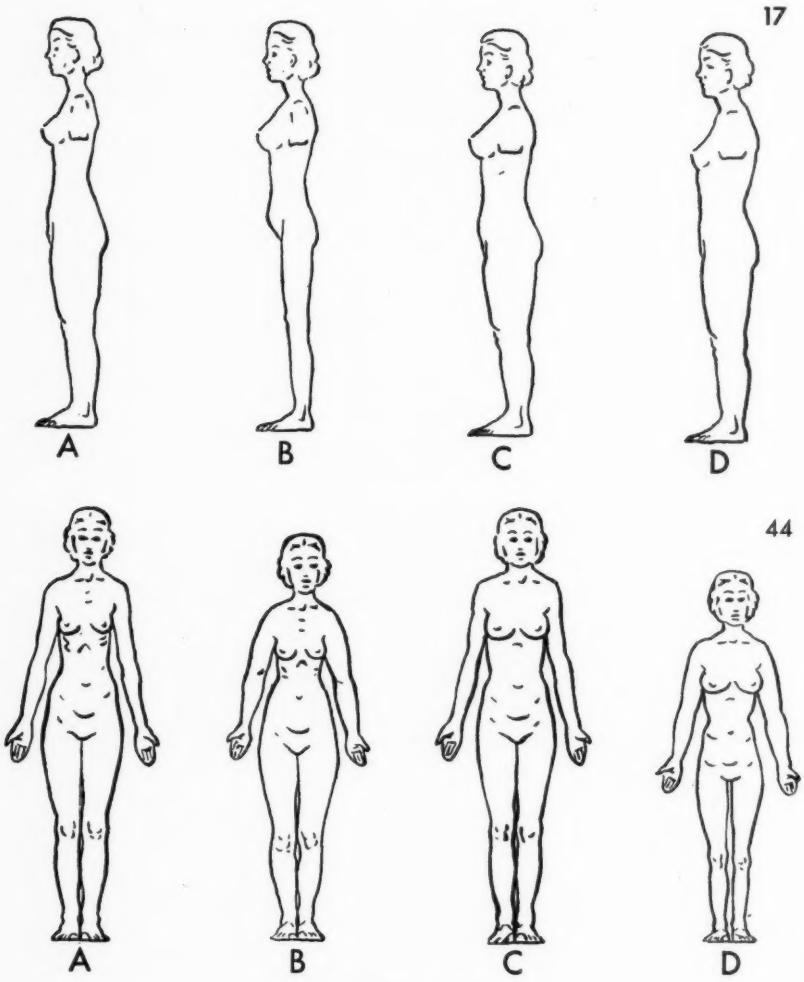
Four lateral silhouettes were then selected at random and placed upon one page. If the same contour of a single area appeared more than twice on any page another random selection was made. In the final form each page of four pictures contained no more than two of the same contour of any single area. Each page was duplicated once and the pages were assigned numbers at random so that the one duplicate page was separated by at least twenty-one pages from the other duplicate page.

On each page of both anterior and lateral silhouettes the four figures were identified as A.B.C.D. consecutively from left to right. The lateral views appeared on pages 1 to 42 and the anterior views from pages 43 to 82 in a ring bound booklet.

*Administration of Body Image Projective Test*

One-hundred freshman and sophomore women were selected at random from those enrolled in physical education classes at the University of California, Los Angeles. These women represented an age span from seventeen to twenty-three years and a wide sampling of majors in all colleges within the University. Subjects were without gross physical defects or abnormalities.

The Body Image Projective Test was administered to the group during a one-hour physical education class period. Each subject was given a separate booklet containing the silhouette pictures. Instructions were to answer for each page the following questions: "What looks most like me?", "What I would least like to look like?", and "What I would most like to look like?". Letters designating the figure




SAMPLE PAGES
BODY IMAGE PROJECTIVE TEST

which best answered each question were recorded on an individual answer sheet. A single picture on each page could be selected to answer one or all of the questions, or three different pictures could be selected. The subjects were not told the purpose of the test.

Subjects completed the test in the one-hour period. Following scoring many subjects asked about the purpose of the test. Most subjects stated that they enjoyed the test as they found the pictures of themselves or of friends and they found pictures that they would like to look like. Several subjects expressed frustration in making selections, and one refused to take the test because of what it might re-

veal. Data reported were derived from the answer sheets of fifty randomly selected subjects.

*Discussion of Body Image Projective Test*

Emphasis in this test was placed upon what the subjects think about their body image rather than upon the reality of their body image. It was believed that a subject's opinion about her body, and what she wanted or didn't want, could provide insight into important aspects of the body image. Therefore, no attempt was made to measure or take pictures of the actual body of a subject in order to test the objectivity of the test responses.

The combination of body parts selected was determined on the basis of experience with young women in situations involving physical therapy, physical activity, and figure control. Since students placed most stress on body proportions and body conformation these were chosen as the variables and were altered as short, normal, or tall, and as thin, normal, or thick.

Although each subject had a forced choice on each page, it was believed that, through factor analysis of the data from the large number of selections within the test, the most dominant aspects of body image would be revealed and that factor analysis of the likes and dislikes would cast light upon feelings about the body image.

As a result of working with the data several figure inaccuracies were found. It was noted that the crest of the ilium in the thin hip-leg anterior silhouette was prominent and high. Such pelvic bony structure is more representative of the deep pelvis with high hip flare of the male body rather than the broad low hip flare of the female. On the lateral silhouettes the large breasts did not appear to be sufficiently larger than the normal breasts. The length of arms, anterior view, were drawn in relation to the length of the torso. Occasionally this distorted the body appearance when a short torso was placed on a long hips-legs or a long torso was placed on short hips-legs. Probably the length of arms is more related to length of legs than to length of torso.

The effect of these figure inaccuracies on the data is not known. Although the length of arms may have little direct effect upon an image, the over-all picture of arms hanging midthigh or at hip level may have influenced subject selection. The lack of size in large breast distortion would not affect the internal reliability of the test but it may limit the range of selection of breast size.

*Design of Objective Rating Scale*

To test the hypothesis that the results of the Body Image Projective Test displayed unconscious elements of an image, an objective rating scale was developed using the same body parts, proportionate lengths and distortions. For each body part subjects were asked to check the column—less than normal, normal, or more than normal—that best represented their present body contour. It was assumed that each subject had an idea of nor-

OBJECTIVE RATING SCALE

| Body Parts | Less than Normal | Normal | More than Normal |
|---|---|---|---|
| Torso Length | | | |
| Hips-legs Length | | | |
| Torso Breadth | | | |
| Hips-legs Breadth | | | |
| Arm Breadth | | | |
| Chest thickness (not breasts) | | | |
| Breasts Size | | | |
| Abdomen Size | | | |
| Hips-legs Size | | | |

TABLE I. Reliability Correlation Coefficients* First and Second Trials Body Image Projective Test

| | "What Looks Most Like Me" | "What I Would Least Like to Look Like" | "What I Would Most Like to Look Like" |
|---|---|---|---|
| *Anterior View* | | | |
| Hips-legs breadth | .955 | .810 | .723 |
| Torso breadth | .812 | .879 | .679 |
| Arm breadth | .904 | .985 | .843 |
| Hips-legs length | .822 | .695 | .748 |
| Torso length | .932 | .958 | .868 |
| *Lateral View* | | | |
| Shoulder breadth | .917 | .750 | .710 |
| Abdomen | .959 | .946 | .920 |
| Hips-legs breadth | .959 | .904 | .873 |
| Breasts | .839 | .865 | .870 |

*All coefficients significant at the .01 level of confidence.

mal and of deviations above or below normal, and further, that deviations above or below normal represented thin or thick, short or tall. Therefore the terms, less than normal, normal, and more than normal were used in the rating scale.

It was assumed that the Body Image Projective Test and the Objective Rating Scale explored the same factors of body image. The Objective Rating Scale was administered on two occasions to the same group at an interval of two months.

*Treatment of Data*

Responses on each page of the Body Image Projective Test, for each of the three questions, were compared to responses on the duplicate page. Length and contour of body parts for the chosen figures were tabulated. Deviations were recorded from 0 to 2, with a possible range of 3. Reliability correlation coefficients were determined. (Table I)

The length and contour of body parts chosen in the first and second trials of the Objective Rating Scale were tabulated. Deviations were recorded from 0 to 2, with a possible range of 3. Reliability correlation coefficients were determined. (Table II)

The total choices of lengths and contours of body parts comprising figures in the Body Image Projective Test were correlated with the total of choices of length and contour of body parts in the Objective Rating Scale. (Table III)

TABLE II. Reliability Correlation Coefficients* First and Second Trials Objective Rating Scale

| | "What I Look Like" |
|---|---|
| *Anterior View* | |
| Hips-legs breadth | .882 |
| Torso breadth | .968 |
| Arm breadth | .770 |
| Hips-legs length | .992 |
| Torso length | .924 |
| *Lateral View* | |
| Shoulder breadth | .845 |
| Abdomen | .953 |
| Hips-legs breadth | .898 |
| Breasts | .903 |

*All coefficients significant at the .01 level of confidence.

TABLE III. Inter-Correlation Coefficient of Body Image Projective Test[a] with Objective Rating Scale[b]

| | "What Looks Most Like Me"[a] with "What I Look Like"[b] |
|---|---|
| *Anterior View* | |
| Hips-legs breadth | .282 |
| Torso breadth | .139 |
| Arm breadth | .104 |
| Hips-legs length | .251 |
| Torso length | .314 |
| *Lateral View* | |
| Shoulder breadth | .310 |
| Abdomen | .396* |
| Hips-legs breadth | .397* |
| Breasts | .319 |

*Significant at the .05 level of confidence; other coefficients not significant.

Pearson Product Moment correlations were obtained on total scores of fifty subjects; correlations were corrected for grouping errors. Levels of confidence were noted in order to establish significance of the correlation coefficient. Nonparametric methods also were utilized but yielded similar results.

*Discussion of Data*

Individual data revealed four patterns of reliability: (1) high reliability on anterior view with low reliability on lateral view; (2) high reliability on lateral view with low reliability on anterior view ; (3) low reliability on both views, and (4) high reliability on both views.

Intensity of feeling as to body part distortion may be inferred from the range of discrepancy between "What Looks Most Like Me", "What I Would Most Like to Look Like", and "What I Would Least Like to Look Like". Profiles of the responses of individual girls and the group presented interesting and varied patterns.

Studies underway using the Body Image Projective Test are: interpretation of the profiles, test standardization, exploration of image profiles with other body image and personality tests, and the development of similar tests for children and young men.

Among questions raised in connection with the data of the Body Image Projective Test were, (1) Is choice consistency evidence of the most secure body image? (2) Is "What Looks Most Like Me" similar to "What I Would Most Like to Look Like", and dissimilar to "What I Would Least Like to Look Like"? (3) Does the "least like" question call forth more intense feelings than does the "most like" question? (4) Is the degree of reliability of the image related to stability of personality? (5) Is the mode of visual perception, field dependent versus field independent, a factor in the response? (6) Is right-left lateral perception a consideration in the response of those subjects who differ in reliability on lateral and anterior views? (7) Is there a discernable relationship between the body image as determined by the Body Image Projective Test and human movement behaviors as determined by the Hunt-Weber Movement Observation Scale?

Comparison of data from the Body Image Projective Test and Objective Rating Scale presented the following question. Is it possible that the terms, more than and less than "normal," of the Objective Rating Scale were construed by the subjects as abnormal and the visual distortions of the Body Image Projective Test construed as differences within the range of normal?

*Findings*

1. The Body Image Projective Test is reliable as a total test and for separate items.
2. The Objective Rating Scale is highly reliable.
3. Relationship between the scores on the Objective Rating Scale and the Body Image Projective Test is not significant at the .01 level of confidence. With exception of abdomen and hips-legs breadth, lateral view, relationships of other scores were not significant at the .05 level of confidence.
4. In the absence of a significant correlation in 7 of the 9 body part factors between the question "What Looks Most Like Me" on the Body Image Projective Test and "What I Look Like" on the Objective Rating Scale, it appears that either the two tests inherently differ or that they measure different aspects of the body image.

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# Some Effects of Set and Stimulus Properties on TAT Stories[1, 2]

BERNARD LUBIN
Indiana University Medical Center

The series of investigations initiated by Fosberg's study (1941) demonstrated the sensitivity of the Rorschach Test to various situational factors including S's attitude toward the test (Hafner, 1958). Weisskopf and Dieppa (1951) found that attitude also is an important determinant of TAT response. During this same period the importance of the stimulus as a determinant of TAT response was recognized (Murstein, 1959).

The increased use of the TAT in both research and in clinical practice as well as the complexity of TAT response attest to the importance of further investigations of the role of attitudinal and stimulus factors in TAT response.

The present investigation assumes that expectation of reinforcement is as important a determinant of behavior in the testing situation as it is in other interpersonal situations (Rotter, 1954), i.e., Ss behave in a manner which they believe will maintain or enhance their self-esteem. Therefore, in this study the S's expectation of reinforcement is manipulated. By means of prestige-suggestion spurious information is given to Ss concerning the important bi-polar behavioral disposition spontaneity-individualty vs. constraint-conformity. The experimental design permits the investigation of these sets as they interact with TAT cards whose stimulus properties tend to elicit the expression of two important socially conditioned drives, sex and aggression.

## METHOD

The experiment has the form of a 3x2 factorial covariance design with three set conditions (Inhibiting, Neutral, and Facilitating), and two stimulus conditions (Sex and Aggression). The six conditions were randomly assigned to 60 subjects. Thus six groups of 10 subjects each were formed.

***Subjects.*** **Sixty subjects** (Ss) were randomly selected from the population of white, male freshmen of a large eastern university. The age range of subjects in each condition was from 18 to 23 with almost identical means and standard deviations.

*Stimuli.* TAT cards with which to constitute the two stimulus conditions were selected by inspection of the data of a previous investigation (Lesher, 1957). By this method two cards which had elicited the highest sexual expression relative to aggressive expression, 2 and 19, were selected for the Sexual Condition; the two cards which had elicited the highest aggressive expression relative to sexual expression, 8 BM and 20, constituted the Aggressive Condition; and the two cards which had elicited low sexual and low aggressive expression, 5 and 7BM, were chosen as the Adjusting Cards.

*Set.* The three attitudinal set conditions were represented by differential instructions which sought by means of prestige-suggestion either to facilitate or to inhibit response. The two experimental groups received identical instructions except for the following key statements:

> For the response-facilitated group, "We know . . . that if you give these cards to

[1] This articles derives from part of a dissertation submitted to the faculty of the Graduate School of Pennsylvania State University in partial fulfillment of the requirements for the Ph.D. degree in Psychology. I wish to thank Dr. Leon Gorlow and Dr. William S. Ray, chairman and co-chairman respectively of my dissertation committee, for their guidance and encouragement.

[2] A part of this paper was read at the Midwestern Psychological Association meeting, Chicago, 1959.

*well-adjusted, mature, normal* people and ask them to create a story, they tell a story that shows they use their imagination to enrich their thinking. They make free use of their imagination as it is stimulated by the picture. They take pride in using their imagination to be as different from other people as they can."

For the response-inhibited group, "We know . . . that if you give these cards to *well-adjusted, mature, normal* people and ask them to create a story, they tell a story that shows that they are the master of their imagination and their feelings. They give the sort of story that would be given by *any other well-adjusted, mature, normal person.*"

A third group (Neutral) received instructions equivalent in length but designed not to influence attitude.[3]

*Dependent Measures. (1) Response Time.* The number of seconds between the presentation of a card and the beginning of *S*'s response was recorded to the nearest second by means of a Mylan, Type 15 stopwatch. *(2) Productivity.* [a] The free response count consisted of the number of words from the beginning of the story until *E*'s standard question, "Can you tell me anymore about it?" [b] The inquiry count consisted of the number of words from *E*'s standard question until the end of the story. *(3) Creativity.* This was measured by a global rating on a five-point scale which ranged from one (very ordinary, very commonplace ) to five (very creative, very unusual, very original). (4) Sexual Expression. This was measured by a global rating on a six-point scale which ranged from zero (no overt expression of sex) to six (maximal overt expression of sex). (5) Aggressive Expression. This was measured by a global rating on a six-point scale which ranged from zero (no overt expression of aggression) to six (maximal overt expression of aggression).

*Experimental Procedure.* Each of the six conditions was completed before any condition was used again. The order of presentation within each set of six conditions was random. Each set of conditions was repeated 10 times so that a total of 60 Ss was used. All Ss were tested individually by the writer.[4]

*S* was told that he was participating in an investigation of perception. Standard TAT instructions (Murray, 1943) were read and the tape-recorder was turned on.

Card number five, the first adjusting card, was then presented. When *S* indicated that he had completed his story, he was asked, "Can you tell me any more about it?" His next indication of completion was accepted. (this procedure of questioning was followed at the appropriate point on each card). *S*'s total response to the first adjusting card constituted the first adjusting story.

Card number 7BM, the second adjusting card was then presented.

At the end of *S*'s response to the second adjusting card, the tape-recorder was turned off and the adjusting cards were removed. The experimental instruction appropriate to the randomized condition which was due at that session was read. The tape-recorder was turned on and the two test cards which were appropriate to the randomized condition due at that session were administered.

The cards were presented in a standard order. The adjusting cards were presented to all 60 *S*'s in the order: 5 and 7BM. The sex cards were presented in the order: 2 and 10. The order of the aggression cards was: 8BM and 20.

*Rating Procedure.* All stories were transcribed, duplicated and coded. Three judges, each of whom had at least one year of clinical experience with the TAT, each rated the 240 stories for aggressive expression before

[3] The complete instructions, the rating scales and the instructions to the raters have been deposited with the American Documentation Institute. Order Document No. 6158, remitting $1.25 for 35 mm. microfilm or for 6 by 8 in. photocopies.

[4] At the beginning of the session, S wrote for five minutes to each of three self-descriptive questions. The analysis of these data is not presented in this report.

TABLE I—Correlations Among the Dependent Measures: Sexual Expression, Aggressive Expression, Response Time, Creativity, Free Response Word Count, and Inquiry Word Count (N = 60)

| Variables | Sexual Expression | Aggressive Expression | Response Time | Creativity | F.R.W.C.[a] | I.W.C.[b] |
|---|---|---|---|---|---|---|
| Sexual Expression | ..... | .204 | —.037 | .429* | .325* | .259 |
| Aggressive Expression | | ..... | .129 | .491 | .289* | .253 |
| Response Time | | | ..... | —.033 | .056 | —.054 |
| Creativity | | | | ..... | .241 | .341* |
| Free Response Word Count | | | | | ..... | .197 |
| Inquiry Word Count | | | | | | |

* Significant at the .05 level.
[a] F.R.W.C. = Free Response Word Count
[b] I.W.C. = Inquiry Word Count

rating the stories for sexual expression. Two judges rated the creativity of the stories. The stories were thoroughly scrambled before presentation to the judges.[5]

*Statistical Analysis.* Separate analyses of covariance were conducted on all dependent variables except sexual expression. The sexual expression measure was submitted to analysis of variance because for this variable the regression of the test measure on the adjusting measure was not significant. Further analysis of the nature of the relationship among the set conditions was made in those cases where the overall analysis indicated a significant effect for the set variable.

The statistical analyses were conducted on the summed scores on each dependent measure for the two cards in each condition.

## RESULTS

*Reliability of ratings of sex, aggression, and creativity.* The mean product moment correlation among the raters for sexual expression was .89, for aggressive expression .84, and for creativity .46.

*Relationships among the dependent measures.* Table I presents the relationships among the dependent measures. These product-moment correlations represent the overall correlation which is based on the within group variability. The variables are obviously not independent. However, it should be noted that response time is not significantly related to any of the other dependent variables.

The effects of set and stimulus properties. Inspection of the means for the sexual expression, aggressive expression, and creativity measures indicated that set as defined in this study is an ordered variable.

Table II presents a summary of the six main analyses of the effects of set and stimulus properties on selected aspects of TAT response. Except in the case of the sexual expression measure, which was analyzed by means of analysis of variance, these are summaries of the analyses of covariance.

The composite summary presented in Table II indicates that set, stimulus properties, and the interaction of set and stimulus properties did not produce statistically significant effects on the response time, free response word count, or inquiry word count measure.

It can be seen that set and stimulus properties produced statistically significant effects on sexual expression and aggressive expression. Set but not stimulus properties produced a significant effect on the creativity of the stories. The low reliability of the crea-

[5] The writer is indebted to the following persons who served as raters: Herman Lerner, Byrna Levine, George Middleton, and John Wilson.

TABLE II—Composite Summary of Separate Analyses of the Dependent Variables[a]

| Dependent Variables | Source of Variability | F |
|---|---|---|
| Response Time | Set Conditions | 0.84 |
| | Stimulus Conditions | 0.82 |
| | Set X Stimulus Conditions | 0.93 |
| Free Response Word Count | Set Conditions | 2.62 |
| | Stimulus Conditions | 0.38 |
| | Set X Stimulus Conditions | 1.37 |
| Inquiry Word Count | Set Conditions | 1.90 |
| | Stimulus Conditions | 0.17 |
| | Set X Stimulus Conditions | 0.32 |
| Creativity | Set Conditions | 11.17* |
| | Stimulus Conditions | 1.71 |
| | Set X Stimulus Conditions | 0.30 |
| Sexual Expression | Set Conditions | 5.32* |
| | Stimulus Conditions | 18.03* |
| | Set X Stimulus Conditions | 4.85* |
| Aggressive Expression | Set Conditions | 4.82* |
| | Stimulus Conditions | 19.92* |
| | Set X Stimulus Conditions | 2.00 |

[a] The Sexual Expression measure was submitted to analysis of variance because the regression of the test cards on the adjusting cards was not significant for this variable. All other measures were submitted to analysis of co-variance.

* Significant at less than the .05 level.

TABLE III—Analysis of Covariance of Creativity Ratings

| Source of Variability | Sums of Squares | df | Mean Squares | F |
|---|---|---|---|---|
| Set Conditions | 180.4111 | 2 | 90.2055 | 11.17* |
| Linear Component | 175.1105 | 1 | 175.1105 | 21.68* |
| Quadratic Component | 4.8746 | 1 | 4.8746 | .60 |
| Stimulus Conditions | 13.8066 | 1 | 13.8066 | 1.71 |
| Interaction | 4.8913 | 2 | 2.4456 | .30 |
| Within Groups | 428.0209 | 53 | 8.0759 | |
| Total | 628.5309 | | | |

* Significant at less than the .05 level

TABLE IV—Analysis of Variance of Sexual Expression Ratings

| Source of Variability | Sums of Squares | df | Mean Squares | F |
|---|---|---|---|---|
| Set Conditions | 298.0333 | 2 | 149.0167 | 5.32* |
| Linear Component | 297.0250 | 1 | 297.0250 | 10.62* |
| Quadratic Component | 1.0083 | 1 | 1.0083 | .03 |
| Stimulus Conditions | 504.6000 | 1 | 504.6000 | 18.03* |
| Interaction | 271.3000 | 2 | 135.6500 | 4.85* |
| Linear Component | 265.2250 | 1 | 265.2250 | 9.48* |
| Quadratic Component | 6.0750 | 1 | 6.0750 | .00 |
| Within Groups | 1511.0000 | 54 | 27.9815 | |
| Total | 2584.9333 | | | |

* Significant at less than the .05 level

tivity measure could have obscured possible significant stimulus and/or interaction effects. The interaction between set and stimulus properties produced a statistically significant effect on the sexual expression measure but the interaction of these two factors was not significant for the aggressive expression measure.

Tables III, IV, and V present sum-

TABLE V—Analysis of Covariance of the Aggressive Expression Ratings

| Source of Variability | Sums of Squares | df | Mean Squares | F |
|---|---|---|---|---|
| Set Conditions | 280.8486 | 2 | 140.4243 | 4.82* |
| Linear Component | 246.6514 | 1 | 246.6514 | 8.46* |
| Quadratic Component | 33.3189 | 1 | 33.3189 | 1.14 |
| Stimulus Conditions | 580.5938 | 1 | 580.5938 | 19.92* |
| Interaction | 116.6782 | 2 | 58.3391 | 2.00 |
| Within Groups | 1544.7160 | 53 | 29.1456 | |
| Total | 2511.7911 | | | |

* Significant at less than the .05 level

maries of the individual analyses of the creativity, sexual expression, and aggressive expression measures.

The additional analyses of the set variable presented in Tables III, IV, and V and the analysis of the interaction between set and stimulus properties on the sexual expression measure presented in Table IV indicate that these effects were essentially linear.

## DISCUSSION

The findings indicate that the sexual expression, the aggressive expression, and the creativity of TAT stories are significantly affected by S's expectation of reinforcement in the testing situation. This supports and extends the findings of Weisskopf and Dieppa (1951) as to the influence of attitudinal factors on TAT response.

The significant effect of the stimulus properties of the cards on sexual and aggressive expression can be taken as a confirmation of the method by which these cards were selected. However, these findings also emphasize the point made by other writers (Murstein, 1959; Eron, 1948; Eron, 1953) that important dimensions of TAT response are determined by the stimulus configurations of the cards.

For the clinical psychologist the evidence indicates the danger in attributing the variance in such story dimensions entirely to personality factors without considering S's attitude toward the test or the data characteristically elicited by the individual TAT cards. The issue is all the more critical in that clinical psychologists make important inferences concerning psychological status on the basis of S's expression of sexual and aggressive drives during the testing situation.

The significant interaction between set and stimulus factors on sexual expression but not on aggressive expression could be due to the fact that the stimuli in the two conditions were not equivalent in intensity. An alternative explanation might be found in the differential cultural conditioning of the sexual and aggressive drives in the population employed. A definitive answer would require an experiment with refinements in both stimulus and subject control.

The fact that these story changes occurred without concomitant changes in response time or productivity raises practical and theoretical problems for further investigation. The clinical psychologist frequently uses response time and productivity cues as collateral data from which to deduce S's attitude toward the test, e.g., the "guarded" or "spontaneous" protocol. The fact that these two measures were not significantly affected and the fact that response time was not significantly related to any of the other measures used in this investigation would suggest caution in using them as indices of attitude. Support for this view comes from the work of Solkoff (1959) who also found little or no relationship between instructions and response time or productivity. Perhaps a conservative view would be that all Ss engage in some form of self-instruction before responding and that such direc-

ting tendencies as were embodied in the instructions employed in this investigation required no unique alteration of existing tendencies. Controlled investigation would be needed to throw light on this question.

Research in progress takes into account two additional aspects of the problem studied here. One phase will explore the effects of experimentally altered TAT stories on selected aspects of clinical judgment. The other phase will seek to establish some of the personality correlates of acceptance or non-acceptance of the prestige-suggestion employed in this study.

## Summary

In order to investigate the effects of set and stimulus properties on TAT response, a sample of 60, white, male freshmen were randomly selected and tested in a 3x2 factorial covariance design. Stimulus conditions consisted of two TAT cards which elicit sexual expression and two TAT cards which elicit aggressive expression. Adjusting measures for the covariance analyses were obtained from the administration under standard instructions of two TAT cards which elicit low sexual and aggressive expression. Sets were produced by differential instructions which sought by means of prestige-suggestion either to facilitate or to inhibit response. One group was told that spontaneity and individuality of stories were indicators of good adjustment and maturity; the other experimental group was told that constraint and conformity were indicators of good adjustment and maturity. A third group received neutral instructions.

The dependent variables were (a) response time, (b) productivity (two word counts), (c) creativity, (d) sexual expression, and (e) aggressive expression.

Three judges rated the 240 stories on a six-point scale for aggressive expression (r=.84), on a six-point scale for sexual expression (r=.89), and two judges rated the stories on a five-point scale for creativity (r=.46).

Analyses revealed that: (1) set and stimulus properties produced statistically significant effects on sexual expression and aggressive expression, but not on response time or productivity; (2) set but not stimulus properties produced a statistically significant difference in the creativity of the stories; (3) the interaction of set and stimulus properties produced a significant effect on sexual expression but not on aggressive expression, creativity, response time, or productivity.

Some of the implications of these findings for the clinical testing situation and for future research were discussed.

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# Passive and Aggressive Responses to the Rorschach by Passive-aggressive Personalities and Paranoid Schizophrenics[1]

JOSEPH J. MOYLAN, JULIE SHAW, WAYNE APPLEMAN
Veterans Administration, Dayton, Ohio

## PROBLEM

The term Passive-aggressive Personality first appeared in a diagnostic nomenclature in 1945 (Nomenclature, 1945) and in 1952 the American Psychiatric Association adopted the term (Manual, 1952). Despite a respectable age of 13 years, the Passive-aggressive Personality has so far received scant attention in the literature (e.g., Hodge, 1955; Singer & Shaw, 1957; Whitman, et al., 1954).

The aim of the present study was to determine whether groups of individuals classified as passive-aggressive personalities differed in terms of Rorschach responses from one subtype of this disorder to another and from a group of Paranoid schizophrenics. The latter group was used as a comparison group because it has been observed that at least one type of the passive-aggressive personality becomes schizophrenic and paranoid as their inability to adjust to life increases (e.g., Noyes, 1953).

The terms used in this classification become rather unwieldy in discussion. For convenience PAP will refer to the Passive-aggressive Personality group as a whole, and the three sub-classifications will be referred to as D-type (Passive-dependent), PA-type (Passive-aggressive), and A-type (Aggressive).

Since formal theoretical statements concerning the PAP are lacking, the assumption of this study was simply that the Rorschach, as a sample of behavior, would reflect the same type of behavior habitually used by the individual in other situations. Further, and by definition, it was hypothesized that the A-type would give significantly more aggressive responses than the other types, that the D-type would give significantly more passive responses, and the PA-type would fall somewhere in between, perhaps giving more responses which combined both passive and aggressive features. Regarding the paranoid group, it was hypothesized that clinically observed "emotional withdrawal" would be manifest by a greater number of neutral responses.

## METHOD

Test protocols of all patients admitted to the Dayton State Hospital in 1957 and who were diagnosed either PA-type, D-type, A-type, or Paranoid schizophrenia were withdrawn from patient files. From this group, males, to whom the Rorschach had been administered, were selected. The following criteria had also to be met: (a) under 55 years of age, (b) within the normal range of intelligence, (c) regarding whom both psychologic and psychiatric staffs were in diagnostic agreement, and (d) no questions of cerebral organic factors were raised in reaching the diagnosis.

Under these restrictions only three A-types were found; this group was eliminated from further considerations. Ten D-types, 13 PA-types, and 12 Paranoids were found; the latter two groups being reduced to 10 each for convenience by a random elimination of 3 and 2 Ss, respectively. Age differences between the resulting groups were not significant; mean age being, Paranoid 37.1 years, PA-type 34.9 years, and D-type 37.7 years.

Previous to this selection, Rorschach protocols of patients admitted

[1] This study was undertaken while the senior author was Research Psychologist, Dayton State Hospital, Dayton, Ohio. Miss Shaw is now attending the University of California; Mr. Appleman, Ohio Wesleyan.

Table I—Total, Passive, Aggressive, and Neutral Rorschach Percepts of Dependent, Passive-aggressive, and Paranoid Patients

| | D-type | | PA-type | | Paranoid | | D-type |
|---|---|---|---|---|---|---|---|
| Mean No. Responses | 16.0 | | 34.9 | | 15.4 | | 16.0 |
| D | | 18.9 | | 19.5 | | 0.6 | |
| t | | 6.3 | | 6.5 | | 0.29 | |
| p | | .01 | | .01 | | .... | |
| % Aggressive R's | 12.3 | | 20.5 | | 10.0 | | 12.3 |
| D | | 8.2 | | 10.5 | | 2.3 | |
| t | | 2.05 | | 2.60 | | 0.57 | |
| p | | .... | | .02 | | .... | |
| % Passive Responses | 33.0 | | 20.5 | | 21.9 | | 33.0 |
| D | | 12.5 | | 1.4 | | 11.1 | |
| t | | 2.50 | | 0.28 | | 2.22 | |
| p | | .02 | | .... | | .05 | |
| % Neutral Responses | 52.5 | | 56.3 | | 62.1 | | 52.5 |
| D | | 3.8 | | 5.8 | | 9.6 | |
| t | | 0.54 | | 0.83 | | 1.37 | |
| p | | .... | | .... | | .... | |

Note: Following Cronbach (1949), percentage entries in Table I are based on the percentage of the response for each *S*, thence the mean of separate percentage scores.

during another year were scored by the junior authors to assure a high level of agreement as to scoring categories. Thereafter, each protocol used in the study, with diagnostic label removed, was scored by each judge and differences of opinion were discussed until a mutually satisfactory scoring resulted.

Aggressive responses were defined as any response as given, or on elaboration, which contained words of an aggressive, destructive, explosive nature (e.g., fire, blood, atom bomb). Animals which are associated with power or aggression (e.g., wolves, tigers, leopards, lions) were also scored aggressive.

Passive responses included any response as given, or on elaboration, which contained words of a passive, dependent, oral-incorporative nature (e.g., dolls, ice cream, flowers, all food responses, and otherwise "childish" responses). Some animals (e.g., butterfly) and all "baby animals" were scored passive.

Passive-aggressive responses included any response as given, or on elaboration, which contained both passive and aggressive elements (e.g., "bear cubs fighting," "a soft, furry coat—all torn and ripped," "a huge explosion with soft, billowy clouds around it").[2]

Neutral responses were all responses which could not be classified as above.

## Results

The data shown in Table I identify the PA-type as being significantly more productive than either of the other two groups, while in terms of productivity, Paranoids and D-types are remarkably similar.

PA-type patients give a significantly greater percentage of aggressive responses than does the Paranoid group and the t-value of 2.05 just misses being significant at the .05 level between PA- and D-types. Paranoids and D-types continue to resemble each other in that the percentage of aggressive responses given by both groups is nearly equal.

Passive responses appear highly characteristic of the D-type. In fact, when an "emotionally toned" re-

[2] This category was scored so infrequently that it was omitted in the final analysis. As a result the percent of passive, aggressive, and neutral responses in Table I will not add up to 100%.

sponse (i.e., a response other than neutral) is given, it is quite likely to be of a passive nature. The D-type, then, gives a significantly greater percentage of passive responses than either of the other two groups. PA-types and Paranoids do not appear to differ on this measure.

While the Paranoid gives a slightly higher percentage of neutral responses than does the D- and PA-type, none of the differences approach significance.

## DISCUSSION

Paranoid patients were not only constricted in terms of number of responses but they were lacking in emotional expression. They resemble D-types in respect to meagre productivity, and inability to express aggression, but the D-type is much more prone to express his passivity. It seems reasonable to conjecture that as the D-type continues to approach the world with his extreme passivity, and as he continues to be rebuffed, he eventually withdraws even this contact with reality and relies on his own fantasy ruminations for dependent gratification.

The PA-type is a significantly more active group than either of the two other groups. They are more prone to express aggression than are the D-type or Paranoid groups. What is of extreme interest regarding the PA-type is that the proportion of their passive and aggressive responses is equally divided. The suggestion is that, as is clinically apparent, the PA-type vacillates in his emotional expression between two extremes.

On the basis of this study it would appear as though the PAP classification contains at least two well defined sub-groups, and that these groups can be differentiated with the Rorschach. There are, however, certain shortcomings in the study. Comparative data on a normal control group is obviously needed. More important, clinically meaningful tonal qualities could not enter into the scoring in the present study, and infrequently do Rorschach examiners indicate such qualitative features associated with a response. Thus, it is quite possible a response, "butterfly" for example, given in a clearly hostile, aggressive tone, was in this study scored passive, when it should have been scored passive-aggressive. In any event, a more sensitive scoring procedure is desirable. It would also be advantageous to "weight" or rank passive and aggressive responses on some continuum of acceptability, or adequacy. It is likely, for example, that Paranoids who did not express aggression to a marked degree, would receive a more "deviant" ranking when aggression was expressed.

## SUMMARY

Rorschach protocols of Passive-dependent type and Passive-aggressive type Personalities and Paranoid Schizophrenics were scored in terms of whether individual responses were passive, aggressive, or neutral. A fourth category, passive-aggressive responses, was also employed but was not used in the analysis because of its infrequent occurrence. It was hypothesized that Paranoids would give a greater percentage of neutral responses, that D-types would give a greater percentage of passive responses and the PA-types would combine features of both D- and A-type PAP's. The hypotheses were largely substantiated but the failure of one scoring category to hold up, the absence of A-types, and other procedural shortcomings suggest the results be accepted with reservations.

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# Pain Apperception in Chronic Schizophrenics

DONALD V. PETROVICH[1]
Veterans Administration Hospital, Jefferson Barracks, Missouri

## PROBLEM

The meaning and importance of pain to the chronic schizophrenic is not clear. Relatively few investigations have been reported and their significance is equivocal. Various physiological measurements have been recorded during painful physical stimulation; and examples of hyper (Cohen & Patterson, 1937), hypo (May, 1948), and normal (Parsons, Gildea, Ronzoni, & Hulbert, 1949) reactions in schizophrenia have been reported and reviewed (Hoskins, 1946; Malmo, Shagass, & Smith, 1951). Some years ago the pervasiveness of schizophrenic "withdrawal" and its possible explanation in terms of lessened physiological reactivity was pointed out (Angyal, Freeman, & Hoskins, 1940). More recently, Malmo et al. (1951) obtained measures of muscle tension, heart rate, blood pressure, and respiration under three stress conditions, including pain-stress with heat apparatus. The experimenters found that the chronic schizophrenics generally had normal or greater than normal physiological functioning, and made the distinction between these background physiological activities and the comparative diminution of "purposive" responses (e.g., pressing a button) made to pain. They concluded that "in schizophrenia those aspects of responsiveness which are associated with emotional arousal may remain intact, while the mechanisms underlying overt, "purposive" acts may be defective or inoperative" (Malmo et al., 1951, p. 372).

The purpose of the present study was to assess pain predispositions or attitudes of chronic schizophrenics through use of a recently developed method, the Pain Apperception Test (Petrovich, 1957). Previous experimentation with this instrument has indicated its efficacy as a research tool (Petrovich, 1958; Petrovich, 1959), and also provides comparison data obtained from a similar but non-psychiatric population, here utilized as the "normal" control group. In accord with the experimental literature, and with the generally accepted thesis of "withdrawal" in schizophrenia, it was hypothesized that the chronic schizophrenics would apperceive significantly less pain intensity and duration in the first nine stimulus pictures than the control group normals. In addition to this comparison of total felt-sensation scores, and the individual pictures comprising this group, comparative assessment of "anticipation" situations was undertaken to provide more definitive analysis of schizophrenic responses and their relationship to the normal. No specific predictions were made regarding the anticipation situations.

## METHOD

The Pain Apperception Test (PAT) consists of 25 pictures of an adult male undergoing pain of various types and degrees: the first nine pictures depict felt-sensation; the next eight compare Anticipation with Felt-Sensation (four counterpart pairs); and the remaining eight (four counterpart pairs) compare Self- with Other-Inflicted pain. Each picture of a counterpart pair is identical except for the variable being investigated. The Self- vs. Other-Inflicted pictures were not used in this study. The following 17 pictures were used: *felt-sensation:* 1, bumped head; 2, cut forearm; 3, hit shin; 4, stomachache;

[1] The writer is indebted to those personnel and patients of Jefferson Barracks VA Hospital whose cooperation contributed to the successful completion of this study.

5, shoulder gunshot; 6, electric shock; 7, headache; 8, stubbed toe; 9, broken leg. *Anticipation vs. Felt-Sensation:* 10-A and 10, fall from ladder; 11-A and 11, ice falling on foot; 12-A and 12, getting deltoid hypodermic; 13-A and 13, getting tooth drilled. To each picture administered him, the subject was required to check his 7-point, multiple-choice response for Intensity and for Duration as follows:

1. *How does the man feel?*
   - _____no pain
   - _____hardly any pain
   - _____some pain
   - _____moderate amount of pain
   - _____much pain
   - _____very much pain
   - _____can't stand the pain
2. *How long will it hurt him?*
   - _____not at all
   - _____seconds
   - _____minutes
   - _____hours
   - _____days
   - _____weeks
   - _____months

For the four Anticipation pictures, the Intensity question was worded, "In view of what will happen, how does the man feel?" The PAT pictures were given in book form and largely self-administered. Additional information regarding rationale, development, and use of the test may be found in previous publications by the writer.

Subjects in the present experiment were 100 diagnosed chronic schizophrenic patients at Jefferson Barracks Veterans Administration Hospital; 35 paranoid type, 12 hebephrenic, 11 catatonic, 3 simple, 5 mixed, and 34 undifferentiated or unclassified. Subjects were alternately assigned to Group A or Group B as follows: *Group A*—Pictures 1, 2, 3, 4, 5, 6, 7, 8, 9, 10-A, 11, 12-A, 13; *Group B*—Pictures 1, 2, 3, 4, 5, 6, 7, 8, 9, 11-A, 10, 13-A, 12. This procedure enabled the comparative analysis of counterpart pictures (Anticipation vs. Felt-Sensation), and permitted direct comparison of the chronic schizophrenic group with a similar but non-psychiatric group (designated "normal" for comparison purposes) of 100 hospitalized male veterans (St. Louis Veterans Administration Hospital) who were previously given the PAT as part of a more extensive experiment (Petrovich, 1958). The present testing procedure was essentially the same as the initial part of the previous experiment, and comparison of results was therefore not complicated by methodological differences.

## Results

Statistical techniques employed in this study (Edwards, 1953; McNemar, 1955) were the same as were used in the prior experiment with normal hospitalized male veterans. As was found with the medical and surgical patients, the distribution of scores (N=100 each) of schizophrenics—for each of the first nine or felt-sensation pictures, and for the total scores for this group of pictures—was found to be essentially normal according to the chi-square goodness-of-fit test. Mean age and education of the chronic schizophrenic group were 36.96 years and 10.48 grades, respectively, as compared to the 37.34 years mean age and 9.78 mean grades completed for the previously tested normal veteran group. These differences were not statistically significant. Split-half reliabilities for the schizophrenic and for the non-psychiatric (normal) subjects are shown in Table I.

Table I. Split-half Reliability of Pain Apperception Test Scores: Schizophrenic and Normal Subjects[a]

| PAT Scoring Category | Subject Sample | Split-half Reliability | |
|---|---|---|---|
| | | Schizophrenic | Normal |
| Intensity..... | Group A | .71 | .79 |
| | Group B | .84 | .67 |
| | All Ss | .73 | .56 |
| Duration..... | Group A | .83 | .85 |
| | Group B | .69 | .84 |
| | All Ss | .66 | .66 |

[a] For Groups A and B, N = 50 each for the 13 (schizophrenics) or 17 (normals) pictures administered each group: for All Subjects, N = 100 for pictures 1 through 9.

Internal consistency of scores was quantitatively similar for each sample, and acceptably high for the essentially projective PAT.

*Felt-sensation*

It was hypothesized that schizophrenics would perceive significantly less Intensity and Duration than normals in the first nine pictures, which depict felt-sensation. Table II shows the comparison between the two samples.

As posited, total scores for pain Intensity and for pain Duration were significantly greater (.001 significance) for the normal subjects, and also were significantly greater for Intensity or Duration, or both, on seven of the nine individual pictures comprising the felt-sensation group. There were no significant differences on pictures 2 and 6, indicating quantitatively comparable Intensity and Duration assessments by the two types of subjects. Pictures 1, 3, 4, 5, 7, 8, and 9 depict a bumped head, hit shin, stomachache, gunshot wound, headache, stubbed toe, and broken leg, respectively, and these elicited a lessening or blunting of associated affect; whereas pictures 2 and 6 (cut forearm and electric shock, respectively) elicited a comparatively heightened, quantitatively "normal" response. Suggested clinical explanation for the schizophrenics' heightened reaction to picture 2 involves the castration anxiety symbolized by the cutting or partial severance of a physical projection (forearm) of the body. Picture 6 depicts electric shock to the hand from an electric outlet. Since the majority of the chronic schizophrenics previously have received electro-shock therapy, it seems reasonable to assume that picture 6 re-arouses affect previously associated with the unpleasant EST experience. The seven pictures in which significantly less pain was

TABLE II. Pain Apperception Test Scores for First Nine Pictures: Schizophrenic and Normal Subjects[a]

| PAT Scoring Category | Picture No. | Schizophrenic M | Schizophrenic S.D. | Normal M | Normal S.D. | t-test[b] |
|---|---|---|---|---|---|---|
| Intensity | 1 | 3.81 | 1.52 | 4.02 | 1.14 | 1.11 |
| Duration | 1 | 3.15 | 1.27 | 3.59 | 1.16 | 2.56** |
| Intensity | 2 | 4.41 | 1.47 | 4.49 | 1.21 | .42 |
| Duration | 2 | 4.14 | 1.28 | 4.25 | 1.04 | .67 |
| Intensity | 3 | 3.09 | 1.29 | 3.30 | 1.03 | 1.27 |
| Duration | 3 | 2.65 | 1.00 | 2.95 | .91 | 2.22* |
| Intensity | 4 | 4.22 | 1.75 | 5.04 | 1.17 | 3.90*** |
| Duration | 4 | 3.71 | 1.47 | 4.39 | 1.24 | 3.54*** |
| Intensity | 5 | 4.92 | 1.66 | 5.22 | 1.09 | 1.52 |
| Duration | 5 | 4.67 | 1.51 | 5.15 | 1.07 | 2.59** |
| Intensity | 6 | 3.55 | 1.84 | 3.32 | 1.55 | .95 |
| Duration | 6 | 2.62 | 1.32 | 2.66 | 1.18 | .23 |
| Intensity | 7 | 3.60 | 1.78 | 4.00 | 1.35 | 1.79* |
| Duration | 7 | 3.76 | 1.62 | 3.89 | 1.13 | .66 |
| Intensity | 8 | 3.91 | 1.46 | 4.37 | 1.21 | 2.43** |
| Duration | 8 | 3.39 | 1.24 | 3.68 | 1.11 | 1.74* |
| Intensity | 9 | 4.18 | 1.91 | 5.38 | 1.22 | 5.38*** |
| Duration | 9 | 4.35 | 1.86 | 5.32 | 1.23 | 4.35*** |
| Total Intensity | 1-9 | 35.69 | 8.12 | 39.13 | 4.70 | 3.67*** |
| Total Duration | 1-9 | 32.44 | 7.17 | 35.88 | 5.26 | 3.87*** |

[a] Pictures 1 through 9 depict felt-sensation. N = 100 each for schizophrenic and for normal subjects.
[b] Calculations for one-tailed t-tests.
* Significant at .05 level.
** Significant at .01 level.
*** Significant at .001 level.

TABLE III. Pain Apperception Test Scores for Anticipation and Felt-Sensation Pictures: Schizophrenic vs. Normal Subjects[a]

| PAT Scoring Category | Picture No. | Schizophrenic M | Schizophrenic S.D. | Normal M | Normal S.D. | t-test[b] |
|---|---|---|---|---|---|---|
| Intensity | 10-A | 4.48 | 2.16 | 4.92 | 1.55 | 1.17 |
| Duration | 10-A | 4.62 | 2.07 | 5.36 | 1.67 | 1.97 |
| Intensity | 10 | 4.18 | 1.83 | 4.40 | 1.92 | .59 |
| Duration | 10 | 4.62 | 1.82 | 4.98 | 1.50 | 1.08 |
| Intensity | 11-A | 3.66 | 1.64 | 3.80 | 1.65 | .43 |
| Duration | 11-A | 3.56 | 1.36 | 3.74 | 1.61 | .60 |
| Intensity | 11 | 4.66 | 1.33 | 4.96 | 1.60 | 1.02 |
| Duration | 11 | 4.26 | 1.32 | 4.72 | 1.20 | 1.83 |
| Intensity | 12-A | 2.54 | 1.24 | 2.04 | .70 | 2.49* |
| Duration | 12-A | 2.46 | 1.33 | 2.00 | .73 | 2.15* |
| Intensity | 12 | 2.68 | 1.09 | 2.16 | .74 | 2.78** |
| Duration | 12 | 2.38 | .86 | 2.00 | .76 | 2.33* |
| Intensity | 13-A | 2.94 | 1.49 | 2.64 | 1.12 | 1.14 |
| Duration | 13-A | 2.58 | 1.00 | 2.48 | .93 | .52 |
| Intensity | 13 | 3.50 | 1.64 | 2.88 | 1.39 | 2.05* |
| Duration | 13 | 3.00 | 1.29 | 2.62 | .94 | 1.69 |

[a] N = 50 each for schizophrenic and for normal subjects.
[b] Calculations for two-tailed t-tests.
* Significant at .05 level.
** Significant at .01 level.

"seen" by the schizophrenics all depict situations which have no apparent special significance or trauma for this syndrome.

*Anticipation and Felt-Sensation*

Comparison of schizophrenic and normal subjects on each of the PAT pictures comprising the Anticipation pictures and each of the Felt-Sensation counterparts is presented in Table III.

Since no prediction was made, two-tailed t-tests were used for the statistical comparison between subject groups. Results disclose greater mean Intensity and mean Duration scores for normals for pictures 10-A and 10, and 11-A and 11, but no significant differences. For pictures 12-A and 12, and 13-A and 13, the reverse was found with the schizophrenics having greater mean scores for both Intensity and Duration, and these differences were significant for five of the eight score comparisons. Reflection concerning this reversal and the greater scores of schizophrenics must take into account the nature of the stimulus pictures. Those for which normals score higher depict only the person who is about to be hurt or is being hurt—man falling from ladder (picture 10-A) and landing (picture 10) on his back; dropped cake of ice about to hit (picture 11-A) and hitting (picture 11) man's foot—and both relate to situations which are relatively rare and probably of little concern for the chronically hospitalized schizophrenic. On the other hand, those pictures in which the schizophrenics see greater pain—man about to get (picture 12-A) and getting (picture 12) deltoid hypodermic; man about to have (picture 13-A) and having (picture 13) tooth drilled—depict situations in which another person is inflicting pain which is necessary and intended to benefit the recipient by alleviating present and future suffering. Clinical observation suggests that schizophrenics do not become too concerned about self-inflicted pain, as compared to the normal reaction; and it is possible that normals can more realistically appreciate and tolerate the infliction of beneficial pain than can the schizophrenic who is often ultra-sensitive to the possibility of bodily harm from other people, even where genuine al-

TABLE IV. Pain Apperception Test Scores for Anticipation vs. Felt-Sensation Pictures: Schizophrenic and Normal Subjects[a]

| PAT Scoring Category | Anticipation Picture No. | M | S.D. | Felt-Sensation Picture No. | M | S.D. | t-test[b] |
|---|---|---|---|---|---|---|---|
| Schizophrenic | | | | | | | |
| Intensity | 10-A | 4.48 | 2.16 | 10 | 4.18 | 1.83 | .75 |
| Duration | 10-A | 4.62 | 2.07 | 10 | 4.62 | 1.82 | .... |
| Intensity | 11-A | 3.66 | 1.64 | 11 | 4.66 | 1.33 | 3.34** |
| Duration | 11-A | 3.56 | 1.36 | 11 | 4.26 | 1.32 | 2.61* |
| Intensity | 12-A | 2.54 | 1.24 | 12 | 2.68 | 1.09 | .60 |
| Duration | 12-A | 2.46 | 1.33 | 12 | 2.38 | .86 | .36 |
| Intensity | 13-A | 2.94 | 1.49 | 13 | 3.50 | 1.64 | 1.79 |
| Duration | 13-A | 2.58 | 1.00 | 13 | 3.00 | 1.29 | 1.82 |
| Normal | | | | | | | |
| Intensity | 10-A | 4.92 | 1.55 | 10 | 4.40 | 1.92 | 1.49 |
| Duration | 10-A | 5.36 | 1.67 | 10 | 4.98 | 1.50 | 1.19 |
| Intensity | 11-A | 3.80 | 1.65 | 11 | 4.96 | 1.60 | 3.57*** |
| Duration | 11-A | 3.74 | 1.61 | 11 | 4.72 | 1.20 | 3.45** |
| Intensity | 12-A | 2.04 | .70 | 12 | 2.16 | .74 | .83 |
| Duration | 12-A | 2.00 | .73 | 12 | 2.00 | .76 | .... |
| Intensity | 13-A | 2.64 | 1.12 | 13 | 2.88 | 1.39 | .95 |
| Duration | 13-A | 2.48 | .93 | 13 | 2.62 | .94 | .74 |

[a] N = 50 each for schizophrenic and for normal subjects.
[b] Calculations for two-tailed t-tests.
* Significant at .05 level.
** Significant at .01 level.
*** Significant at .001 level.

truism exists. It is also possible that unconscious homosexual fears of bodily penetration are heightened even by the relatively innocuous hypodermic needle and dental drill.

*Anticipation vs. Felt-Sensation*

Statistical comparison between scores of each Anticipation picture and its Felt-Sensation counterpart is presented in Table IV for the chronic schizophrenics and for the normal comparison group.

As Table IV indicates, significant differences in counterpart picture scores were found only for pictures 11-A and 11; and for both schizophrenics and normals the Intensity and Duration were significantly greater for the Felt-Sensation (ice landing on man's foot) as compared to the Anticipation (ice falling toward man's foot). Inspection of Table IV in its entirety shows the directional correspondence between scores of schizophrenics and normals on each of the counterpart picture pairs. Thus for pictures 10-A and 10, both groups tend to evaluate the Anticipation (man in mid-air falling from ladder) as more painful than the resulting Felt-Sensation (man has just landed on his back), whereas the Felt-Sensation was usually evaluated as somewhat more painful than its Anticipation in the case of the other counterpart situations (ice falling, hypodermic, and dental drill).

## DISCUSSION

While there are differences between schizophrenics and normals as indicated by comparing their Intensity scores and comparing their Duration scores for each of the eight pictures comprising the Anticipation – Felt-Sensation group (Table III), the comparison of scores for counterpart pictures (Table IV) indicates similarity between the two types of subjects insofar as their reaction to anticipated pain is concerned. In absolute terms, the schizophrenic perceives greater painfulness than the normal,

in both the Anticipation situation and its Felt-Sensation culmination, when another person is involved in administering the pain stimulus. The normal infers or assumes greater painfulness when the pain, whether imminent or inflicted, is self-induced. But from a relative standpoint (Anticipation vs. Felt-Sensation), both schizophrenics and normals seem to "see" or "feel" greater anticipatory threat when the imminent sufferer is comparatively helpless to alter his immediate fate (picture 10-A—man a foot from landing on his back after fall from ladder), as compared to those situations in which he has greater control over what will happen (picture 11-A—man standing upright as ice falls toward his foot) and/or the purpose for the imminent inflicting of pain is beneficial, as in the hypodermic (picture 12-A) and dental drill (picture 13-A) situations.

In his response to the PAT, the chronic schizophrenic is apparently sensitive to the nuances conveyed by particular pain situations. That his responses in terms of pain intensity and duration are not random or haphazard occurrences is indicated – as also was found in the normal comparison group—by the essential normality of response distribution and by the acceptably high reliability of test scores. While the schizophrenic usually "saw" less pain in the pictured situation, it also was found that at times he scored higher, and sometimes significantly so, than the normal in the evaluation of particular pictures; and some logical explanation for these scores was advanced as a function of the personality dynamics often encountered in the schizophrenic syndrome.

Regarding the schizophrenic's pain reaction, Malmo, Shagass, and Smith (1951) distinguished between the background physiological activities associated with emotional arousal and the defective or inoperative "purposive" acts. This would seem to mean that the schizophrenic, in normal fashion, physiologically perceives the pain or threat of pain but, unlike the normal, is defective in ability to react purposively thereto. While this conclusion has operational specificity, the complicated and unfamiliar experimental situation and apparatus may render rather vague the purposiveness of pressing a button to signal pain. Will it please or anger the experimenter, terminate the pain, harm the subject, indicate the subject's ability to stand pain, or something else? It is also true for people in general that a physical or physiological state conducive to feelings of pain does not necessarily produce its equivalent in mental discomfort. Results of the present experiment, involving psychological evaluation of more realistic and familiar pain situations, permit explanation at a different level and indicate that pain perception of chronic schizophrenics is selective, defensive, and therefore purposive from the standpoint of serving their needs.

## Summary

One hundred hospitalized, male, chronic schizophrenics were given the Pain Apperception Test to assess their predispositions or attitudes regarding pain. Intensity and duration responses were obtained from each subject for 17 of the 25 PAT pictures, including the 9 felt-sensation pictures and the 8 counterpart pictures (four pairs) depicting Anticipation vs. Felt-Sensation. Data from a previous experiment provided a comparison group of 100 normal (non-psychiatric) male patients. Results and conclusions were:

1. Split-half reliability of PAT scores of chronic schizophrenics compared favorably with reliability coefficients found for normals, and was sufficiently high (.66 to .84) for this essentially projective test.
2. As compared to normals, chronic schizophrenics are generally predisposed to react emotionally or psychologically to a significantly lesser extent to pain situations wherein the pain is self-inflicted or

sustained (felt-sensation); but their reaction to pain situations of particular experiential or dynamic importance is likely to be comparatively heightened, and quantitatively comparable to the normal reaction.

3. Concerning anticipatory pain situations, in absolute terms the chronic schizophrenic perceives greater than normal painfulness when another person is about to inflict (Anticipation) or is inflicting (Felt-Sensation) the pain; and less than normal painfulness when the pain will be or is unintentionally self-induced; relatively (Anticipation vs. Felt-Sensation), chronic schizophrenics resemble normals in inferring greater anticipatory painfulness or threat when having relatively little control over the imminent noxious stimuli, and in perceiving less anticipatory threat when the purpose for pain infliction is presumably beneficial.

4. It was concluded that the response of chronic schizophrenics to pain was not lacking or defective in purposiveness, but, rather, that their pain perception is selective, defensive, meaningful and purposive from the standpoint of serving their needs.

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# Instruction Variation and Rorschach Performance

E. Jerry Phares, Lawrence M. Stewart[1], and James M. Foster
Kansas State University

An increasing volume of research on projective testing has resulted in a growing emphasis on the situational aspects of such testing. No longer does it appear possible to accept the beliefs of projectivists, as stated by Macfarlane and Tuddenham (1951), that the psychological determinants of every projective response are basic and general or that such tests tap the durable essence of personality equally in different individuals. Variables such as examiner, test instructions, set of patient, and place of testing all interact with motivation or dynamics to produce a given response. Phares and Rotter (1956) have demonstrated that such variables provide cues for expected reinforcements and thus affect obtained responses. An important research task is that of identifying and studying the effects of situational variables, or, on the other hand, ascertaining when these variables appear to have little effect on test results.

The present study attempts to relate *Ss*' conceptions of the nature of the Rorschach responses to elicited Rorschach responses. Sarason (1954) has specifically suggested that in Rorschach testing a factor to be considered in the evaluation of form-level is how *S* interprets the instructions. He states:

> If a subject interprets the instructions to mean that one is supposed to "let his mind go" — to free-associate — then his "poor" responses do not have the same significance as those of a patient who has concluded that there is a right and wrong answer. We are here trying to indicate that, while reliability of the evaluation of form quality is necessary, it is clearly not a sufficient answer to the problem of understanding the significance of variations in form quality within and between individuals in the clinical interaction (1954, p. 236).

[1] Now at the Marshall County Mental Health Center, Marshalltown, Iowa.

Several studies have been done which specifically bear on the foregoing position. Henry and Rotter (1956) found that *Ss* who were told the Rorschach is used to discover serious emotional disturbances gave more cautious and conforming responses than did a group which received the standard Klopfer instructions. Carp and Shavzin (1950) demonstrated that *Ss* asked to make a good impression and then a bad impression showed marked individual changes although there were no consistent group shifts. Forsberg (1938, 1943), giving the Rorschach under four sets of instructions, could not demonstrate significant shifts in Rorschach psychograms. Luchins (1947) found that *Ss*' fear of being labelled "psycho" influenced Rorschach performance. Hutt, Gibby, Milton, and Pottharst (1950) demonstrated a relationship between Rorschach instruction variation and response variation. Schachtel (1945) also argues that *Ss*' definitions of the test affect their responses. In another study (Peterson, 1957) one group of *Ss* was given Klopfer instructions, while another received instructions emphasizing strongly that the test measured imaginative ability. Generally, there was little difference between the groups' responses. Several other studies have shown the effect of various situational variables on Rorschach testing (Coffin, 1941; Eichler, 1951; Gibby, Miller, and Walker, 1953; Kimble, 1945; Klatskin, 1952; and Lord, 1950).

The present study is an attempt to test the hypothesis that *Ss*' categorizations of the Rorschach as a test in which there are "right and wrong answers" will lead to the following results: (a) higher form-level; (b) more populars; (c) more animal content (Sum of A, (A), Ad, (Ad), AAT);

(d) more F responses; (e) fewer total responses; (f) fewer movement responses (Sum of M, FM, m, mF, Fm); and (g) fewer color responses (Sum of C, CF, FC, C', C'F, FC', $C_n$, $C_{des}$, $C_{sym}$).

It was felt that *Ss* who categorized the situation as one wherein there are right and wrong answers would likely perform in a more cautious or safe manner. This would, therefore, lead them to see more populars, show a higher form-level, give fewer C responses, etc. A group perceiving the test as one where "it is all right to let your mind go," should be much less likely to inhibit or censor responses because they seemed wrong or somewhat irrational. This reasoning follows no particular theoretical line but is based on what Henry and Rotter (1956) call a "common-sense" point of view. It certainly appears likely that many *Ss* ordinarily believe that there are right and wrong or good and bad Rorschach responses despite the usual instructions to the effect that different people see different things. Most people have had enough experience with tests to "know" that an answer is right or wrong so that a conception of an answer that is neither right nor wrong would be rather foreign. Undoubtedly there are additional Rorschach scoring variables which could have been included in this study. However, in the light of previous research these appeared most susceptible to instruction variation.

## METHOD

*Subjects.* Fifty-six female students in introductory psychology courses at Kansas State University were randomly assigned to two groups of 28 each. In none of the psychology courses from which *Ss* were drawn had projective testing been discussed.

*Examiners.* Two examiners were used. Both had recently completed a course in projective testing and were at approximately the same level of skill in administering the Rorschach. One examiner tested 15 control *Ss* and 15 experimental *Ss*; the other tested 13 experimental *Ss* and 13 controls.

*Procedure.* Upon appearance for testing, *Ss* were read one of the following sets of instructions:

*Experimental group*: In this test we want to see how well your perceptions correspond with those of other people your age. In other words, to what extent do you see things like most other people do? The goal here is to do as well as you possibly can. Be sure to give the very best answer you can. Be as correct as possible.

Okay. The test consists of inkblot pictures. People see all sorts of things in these inkblot pictures; now tell me what you see, what it might be for you, what it makes you think of.

*Control group*: I'm going to show you some inkblot pictures. People see all sorts of things in these inkblot pictures; now tell me what you see, what it might be for you, what it makes you think of.

The Rorschach was then administered to each *S* in the standard fashion. A free, non-probing inquiry followed at the end of each test. The usual question was, "What was it about the card that reminded you of .....?" Each *S* was asked to outline his response on a location sheet. Thus, "Please outline what you saw here so that I can see it just the way you did." It was felt that this procedure would particularly aid the judges in their scoring for form-level.

*Scoring.* Each protocol was scored blindly according to Klopfer's system (1954) with two exceptions. The populars used were a combination of those of Hertz (1936), Beck (1944), and Klopfer (1954). Also, form-level was judged using Janoff's technique as described by Sarason (1954, pp. 236-241). In this procedure each response is given a basal rating ranging from +2.5 to −3.0. Under some conditions, credits are added to the basal rating. Two raters independently

TABLE I—Means and Sigmas for 28 Experimental and 28 Control Subjects

| Variable | Experimental | | | | Control | | | |
|---|---|---|---|---|---|---|---|---|
| | A* | | B | | A | | B | |
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| Responses | 19.80 | 3.21 | 12.62 | 4.14 | 23.80 | 4.62 | 15.23 | 5.23 |
| Form-level | 1.04 | .38 | 1.14 | .52 | 1.00 | .41 | 1.12 | .30 |
| | Proportions | | | | | | | |
| Form | .41 | .16 | .46 | .20 | .46 | .16 | .41 | .17 |
| Popular | .30 | .13 | .31 | .12 | .27 | .12 | .30 | .10 |
| Movement | .31 | .13 | .35 | .20 | .26 | .17 | .38 | .14 |
| Color | .31 | .16 | .25 | .13 | .34 | .14 | .27 | .15 |
| Animal content | .52 | .13 | .45 | .11 | .50 | .13 | .55 | .14 |

* A and B refer to examiners.

scored twelve randomly selected records in order to ensure reliability of scoring. Percentages of agreement were calculated between the two raters. The average percentage of agreement was .90 (the range being from .78 for form-level to .98 for total number of responses). *E*'s scoring alone was used in testing the hypotheses. With the exception of total responses and form-level, *Ss'* scores were converted into proportions (number of given responses divided by total number of responses). Form-level refers to a ratio of the algebraic sum of all form-level ratings to total number of responses.

## RESULTS AND DISCUSSION

Group means are shown in Table I. In order to test the hypotheses, analyses of variance were conducted. In the case of total responses, the data were transformed to a logarithmic scale, while an angular transformation was applied to data expressed in proportions.

Examination of Table I reveals that several of the results are in the predicted direction. The exceptions are form, movement, and animal content. In some instances, Examiner A reverses Examiner B in direction of results. However, none of the analyses of variance yielded F values significant at the .05 level. Thus, within the limits of this study, instruction variation had no effect on the variables under study. The only significant portion of the data was a difference between examiners in total number of elicited responses. This analysis of variance is shown in Table II.

TABLE II—Analysis of Variance of Total Responses Data

| Source of Variation | df | Mean Square | F |
|---|---|---|---|
| Betw Examiners | 1 | .3285 | 9.41* |
| Betw Instructions | 1 | .0494 | 1.42 |
| Interaction | 1 | .0032 | .09 |
| Within Groups | 52 | .0349 | |

* An F of 7.17 is significant at .01 level.

Although the instructions produced no significant differences between means, the examiner results are similar to the results of Lord (1950). She reports examiner differences in total responses, C'%, M%, and C% among others. As in this study, however, there were no differences in A%, P%, and F%. Direct comparison is difficult since her examiners were different from the present ones, and further, some of the data in the current study were combined; for example, M and FM, C' and C, etc. One of the examiners indicated at the conclusion of this study that more experimental *Ss* than control *Ss* seemed to make comments during testing of an impotent nature or comments indicating lack of confidence in the "goodness" of their responses. These impressions are highly subjective, of course, but might prove interesting hypotheses for future research.

One factor to be considered in relation to lack of differences between instructions would be the relative homogeneity of *Ss*. Since they were all college students there may have been

an initial tendency for them to perceive the test in a "right or wrong" light. This tendency could have operated to obscure the differential effect of the instructions.

Perhaps a significant aspect of this study is its demonstration that the Rorschach is not completely at the mercy of situational factors. Thus, the growing literature emphasizing situational aspects of Rorschach testing has implied high variability in *Ss* responses. Granted that variation as a function of the situation exists, so too does stability.

## SUMMARY

In this study it was predicted that when *Ss* categorize the Rorschach testing situation as one in which their responses are either right or wrong the result would be fewer total, movement, and color responses; more popular, animal, and pure form responses; and a higher form-level. *Ss* were 56 female students in introductory psychology. Thirty *Ss* were tested by one examiner and 26 by another. Experimental *Ss* were given instructions emphasizing the right-wrong nature of Rorschach responses and encouraged to do the best they could; control *Ss* received only the standard Klopfer instructions. Raw scores on all variables except total responses were converted to proportions or ratios. An angular transformation was performed on all proportion data and a logarithmic transformation on total response data. Analyses of variance were conducted for each variable. Results showed that none of the hypotheses was confirmed at a statistically significant level, although several variables showed differences in the predicted direction. The only significant result (non-predicted) was a difference between examiners in total number of responses elicited.

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# A Manual for Rating Drive Content in the Thematic Apperception Test[1]

FRED PINE
Research Center for Mental Health, New York University

Since the Thematic Apperception Test (TAT) was first introduced (Morgan and Murray, 1935) its clinical and its research applications have developed unevenly. While practicing clinicians draw heavily upon TAT material in psychodiagnosis, many researchers shy away from the use of such a bulky instrument even in dynamically oriented research—and this in spite of its demonstrated research utility (cf., Holt, 1950). The numerous methods which have been developed for semi-objective analysis of the raw TAT protocol (cf., Shneidman, 1951) seem designed primarily to facilitate intra-individual analysis. The task of an adequate scoring manual for research purposes is to describe theoretically significant variables which have broad enough relevance to permit meaningful comparisons among individuals. One such set of variables, suggested by psychoanalytic theory, are those associated with processes of impulse expression, with ego control operations, and with the coordination between these two.

Consideration of recent developments in psychoanalytic ego psychology (cf., A. Freud, 1937; Hartmann, 1958; Kris, 1952) suggested a dual significance in the use of drive content in TAT stories. At the one extreme, the absence of such content suggests the workings of a pervasive, generally rigid, and often fragile system of ego defenses. At the other extreme, there are at least two implications depending upon how drive content is expressed: (1) that there is a weakening of ego control over impulses such that these impulses break through in ego alien and/or maladaptive ways, or (2) that drive energies have been sufficiently "neutralized" (Hartmann, 1955) to be used in productive ideational activity rather than solely in the direct pursuit of libidinal and aggressive aims. The present manual outlines a procedure for rating libidinal and aggressive drive material in the manifest content of TAT stories.

The degree and kind of ego control over expressed drive content alters the interpretation to be placed on the dynamic significance of such drive expression. In contrast to the dream where the relatively more universal workings of the "primary process" (Freud, 1900) are in evidence, the TAT evokes the relatively more individualized workings of the "secondary process" (Freud, 1900) as indicated by the planned and internally consistent character of these stories in general; there is, at least in normal persons, a fair degree of active ego control over the drive content which is expressed in the TAT. The present manual describes a procedure for rating the degree to which drive content is integrated into the theme of the TAT story, the effectiveness of such integration being considered an index of ego control. Drive content which is expressed as an integral part of the story theme meets the requirements of the TAT task, and as such is a fully adaptive response. In sharp contrast is the disruptive and inappropriate appearance of drive content which reflects a weakening of ego control. Between these extremes, various incidental uses of drive content are possible — for example, when *S* barely manages to relate such content to the main story or when it is deliberately used incidentally in such a way as to lend dramatic or stylistic enrichment to the theme. The manual provides for ratings of thematic, in-

[1] The manual was developed as part of a research project supported by a grant from the Ford Foundation.

cidental, and inappropriate uses of drive content.

Ego control may also be reflected in the level of drive expression, i.e., in the moderation of drive intensity and the socialization of its aims. The manual describes ratings for three such levels: (1) direct-unsocialized drive expression, (2) direct-socialized drive expression, and (3) disguised, indirect, or weak drive expression. Although a heavy preponderance of direct-socialized drive expression may have no pathognomic implications, a preponderance of direct-unsocialized and/or of indirect and disguised drive content suggests an imbalance between ego control and impulse expression. The relationships among the three levels have implications regarding the nature of control operations.

In addition to its links to psychoanalytic theory, the present manual has at least one other characteristic to recommend it for research purposes: it was developed in a research context as an attempt to systematize available material on a group of subjects then being studied (Pine, 1959). It provides over-all summary scores to facilitate inter-individual comparisons, as well as providing the raw material necessary to derive additional summary scores tailored to other research requirements.

## THE SCORING MANUAL

### *Presence of drive content*

Throughout the manual, the term "drive" is used in the psychoanalytic sense to refer to instinctual drives and their derivatives. This includes aggressive and libidinal drives and partial drives (oral, anal, phallic, genital, exhibitionistic, voyeuristic, sadistic, masochistic, homosexual, narcissistic) (cf., Freud, 1905). The term "drive content" refers to observable ideational derivatives of the inferred aggressive and libidinal drives. These derivatives appears in the TAT story content.

Drive content is rated only if it is stated explicitly in the story; thus, for example, implied motives and symbolic expressions of drives are not rated. The decision to rate only the manifest story content was made for two reasons: first, in the belief that individual differences would be erased somewhat in speculations about more universally present drives which are latent (in the story) and unconscious (in the person); second, in an attempt to relate the ratings closely to the psychology of ego functioning. The manual is not intended to be an all-purpose one; both its usefulness and its limitations are tied to its commitments to psychoanalytic theory (reflected here in the selection of aggressive and libidinal drives for rating) and its more specific commitment to psychoanalytic ego psychology (reflected here in the emphasis on control operations with regard to expressed drive content).

Drive content is rated if it appears at any point in *S*'s response to a TAT card except in response to a direct inquiry question. Thus, "how did he feel?"—"angry" would not be rated although responses to inquiries such as "tell me more" or "how did it all turn out" are rated. Drive content is rated without regard to its extent; passing mention or full thematic development of, say, an aggressive incident would each be rated. On the other hand, drive content which is too far removed from aggressive or libidinal connections is not rated (for example, friendship, achievement motives, gazing at scenery); it was found necessary to establish some such cutting point, albeit an arbitrary one, in order to avoid a tendency to rate almost everything *S* says. The ratings of drive level, described below, represent an attempt to cope with this entire issue. Finally, affective experiences which are directly linked to particular drives (anger, love) are rated, although affective states in general are not (shame, guilt, sadness, elation, etc.). These and all other

ratings are illustrated below.

*Integration of drive content*

*S*'s task on the TAT is to tell a story about a picture. To the degree that drive content is given in accord with this task requirement, some ego control is indicated. The degree to which drive content is integrated into *S*'s response to a card (the response ordinarily being a story, but on occasion an essay-like production or an elaborated description) was taken to be an index of appropriateness of drive expression and adequacy of ego control.

Of the appropriately used drive content, two types were distinguished. Drive content which is part of the central theme or character portrayal of the story is rated *thematic,* in contrast to drive content which is *incidental* to the main theme (but still part of the story). Drive content can be rated thematic even if it is given only briefly; its links to the main story rather than its extent is at issue here. Even if the rater feels a story could get along without an item of drive content, if *S* gave it as part of the central story theme it is rated thematic. Incidental drive content, while integrated into the story, is generally expendable even in *S*'s presentation of the material. For example, drive content is generally incidental when it is given in analogy which is intended tangentially to enrich the story.

In contrast to both thematic and incidental ratings, a rating of *nonappropriate* is given to those expressions of drive which are not in accord with the TAT task (telling a story about a picture) or which were not intended by *S*. These include: 1. Exclamations and side comments before, during, or after the story (for example, "Wow, this is a sexy one" or "That murder last week gives me an idea for this story"). 2. Drive content given in card descriptions when it does not then get included in the story (for example, mention of the gun on card 3BM followed by a story about fatigue rather than, say, suicide). 3. Misperceptions or doubts about the identity of persons or objects when drive content is involved (for example, calling the violin on card 1 a machine gun or misperceiving the sex of a character; the figure on 3BM and the lower figure on 18GF were unrated whether seen as male or female). 4. Verbal slips where drive content is evident in the slip itself (including the sexual ambiguity suggested by use of wrong-sex pronouns—"he" instead of "she" for example). Slips that are made in a broader drive content context are rated separately while the story context gets its own rating.

*Directness of expression of drive content*

TAT stories vary in the degree to which their expressed drive content is primitive, value-violating, and direct on the one hand, or socialized, value-syntonic, and/or disguised on the other. The present manual distinguishes three levels of expression of drive content, the levels partially modelled after Holt and Havel's(1959) distinction between two levels of drive content in Rorschach responses.

*Level I* (direct-unsocialized) includes those expressions of drive content where libidinal or aggressive impulses are directly expressed in a way contrary to conventional social values. Murder, robbery, rape, prostitution, homosexuality, alcoholism, and extramarital sexual relationships, for example, are all rated here. In addition to the criterion "violation of conventional values," a second criterion is applied for aggression derivatives, i.e., physical expression. Anger is rated level I only when it involves physical violence. In all cases, it is only the unsocialized and direct drive expression in the *manifest* story content which gets rated.

*Level II* (direct-socialized) includes those expressions of drive content where libidinal or aggressive impulses are expressed directly but in socialized ways. Anger expressed without phys-

ical violence, arguments among family members, sexual rivalries and jealousies, kissing, eating, social drinking, intercourse between marriage partners, and childbirth are all rated here.

*Level III* (indirect-disguised; weak) actually includes two kinds of drive content.[2] The first, indirect and disguised drive expression, includes those instances that are associated with (often relatively strong) drives, but where the underlying impulse is neither explicitly thought nor acted upon in the story. Mention of police, soldiers, rulers, restaurants, saloons, illness, accidents, natural or accidental deaths are all included here. All of these permit the inference that a particular drive is an issue for the person but, although some reflection of the drive appears in the manifest story, the drive itself is not expressed. If the context alters this, e.g., "he *ate* in a restaurant" or "the soldier *fought*," level II or I would be rated. The second type of content rated level III includes drive expressions which are weak and highly derived. For example, social expressions of aggression derivatives such as strikes and militant unions are rated here as are highly formalized drive expressions such as familial affection. An arbitrary cut-off point must be established here so that material which is too weak does not get rated. Reference to surgeons, microscopes, struggles to get ahead in life are not rated although inferences can readily be made to impulses from which they derive.

Three additional points on drive level ratings: (1) Negation of drive expression is rated identically with positive expression. "He wanted to kiss her but he didn't" is rated level II. (Such negated expressions are often given in such a manner as to make then "incidental"; for example, "let's see . . . it's not that he wanted to kiss her, I'd say he just liked her.") (2) Thoughts and wishes are rated equally with actions in most cases. "He wanted to kill him" is rated level I whether or not the act is carried out. On occasion, such content is given as a way of communicating intensity rather than true intent; in those instances a more controlled level may be rated. (3) Context is always considered in rating drive level. For example, kissing as part of an attempted seduction of a married person is level I rather than II. Similarly, criminal execution and war are the two major examples of killing that may be rated level II rather than level I; for war stories, the level II rating is given when the emphasis is on patriotism, duty, and the normal course of events in war rather than on aggressive acts and violations of rules of warfare.

*Units of analysis*

Drive material may be rated many times in any one story, and considerations of the extent of the expressed content were independent of the rating unit. Several rules were established to guide raters in selecting the unit to be rated in each instance: (1) Expressions of derivatives of different drives are rated as separate instances of drive expression. For example, "he was angry but a couple of drinks helped him to settle down" would be rated once for the aggressive content and once for the oral content. (2) Expressions of drive with differing degrees of integration into the story (thematic, incidental, or nonappropriate) are always rated separately, even if the drive expressed is identical. Thus, an incidental and a thematic aggressive phrase would receive two ratings. (3) In contrast, a new level of an already expressed drive would not get a separate rating. "He went into a bar (level III) and got dead drunk" (level I) would be rated only once, the rating of the more extreme content. This stepwise expression of drive material appears so often and generally with such an inevitability in the sequence that to rate them inde-

[2] Mrs. Shirley Winston at New York University is currently experimenting with a division of these two types into separate rating categories.

pendently would artificially raise the total number of ratings given. (4) Within the same general type of drive content and the same degree of integration separate ratings are given if new behavior sequences are described or if the expressed impulse has a new aim.

*Summary scores*

In the initial research for which the manual was developed, seven summary scores were derived for each *S:* a score representing the total number of drive content ratings; one score each for the number of thematic, incidental, and non-appropriate ratings; and one score each for the number of level I, level II, and level III ratings. The total of the three levels scores is equal to the total drive presence score, as is the total of the three integration scores. Since the six sub-scores are therefore not independent of the total number of drive content ratings, total drive content must be held constant in statistical work with the sub-scores.[3]

There are various other possibilities for summarizing the discrete ratings. Scores for amount, integration, and level can be derived for specific drives — separating aggressive or particular libidinal impulses.[4] Further, more inclusive scores which combine the various degrees of integration or levels of drive expression can be derived. Weighting the instances of drive integration (three times the number of thematic ratings plus two times the number of incidental ratings plus the number of nonappropriate ratings) and dividing by the total number of ratings gives a score which represents a trend towards well-integrated drive content at the one extreme and poorly integrated drive content at the other. Ranking the percent of level I ratings from most to least and the percent of level III ratings from least to most, adding the two sets of ranks, and re-ranking the totals gives a ranking ranging from highly modulated drive content at the one extreme (low level I and high level III) to relatively unmodulated drive content at the other extreme (high level I and low level III). These global scores, plus a score for total drive presence, were used in gauging the validity of the manual; and results with these scores are described below.

*Some illustrative stories and ratings*

Four illustrative TAT stories are given below. Stories particularly rich in rating issues were selected. In each, certain material is lettered and italicized; comments on the lettered material are given immediately following each story, using the letters for cross reference. Ratings are given in parentheses. The first symbol indicates the drive level (I, II, or III); the second symbol indicates the degree of integration ("T" for thematic, "In" for incidental, and "N" for nonappropriate).

1. (Card 3BM) (a) *Well, I take it that is a pistol on the floor.* This young man is in a Balkan country. He was young and (b) *inclined to melancholy.* (c) *The Germans had overrun the country. His father had been captured and killed by the Germans.* His fortune was lost and *all his friends died.* Oh, I forgot to say he was Jewish. He's been making feverish attempts (d) *to release his father,* but without success. Now he has returned from an exploit where he went to German headquarters, (e) *shot the man who was there,* and ran through the streets to his home. He knows what will happen when he's caught, so he (f) *puts a bullet through his own head.* (g) *I guess that's a pistol. It*

[3] In the initial study (Pine, 1959), these scores were correlated (tau) with literary quality in the TAT: literary quality varied positively with total drive content; with thematic use of drive, and with level III drive expression, and negatively with nonappropriate use of drive.

[4] F. Goldberg at New York University has found some preliminary but suggestive evidence of an inverse relationship between aggression ratings on the TAT and responsiveness to subliminal stimuli involving aggressive themes.

*certainly isn't a very realistic representation of one though.*

a. (Not rated) Although this is card description, it is later used in the story. Had the gun been mentioned and then omitted from the story it would have been rated III-N (level III because it is associated with an aggressive impulse which, however, would not have been expressed in the story). As is, the rating is included with (f), below.

b. (Not rated) Affects are rated only if drive content is specifically stated.

c. (I-T) All of this is rated as one unit. The emphasis on the atrocities of war requires the level I rating. It is all central to the story theme.

d. (I-N) The phrase "release his father" contradicts the earlier "his father had been captured and killed." There is a slip here somewhere, and since it involves the killing of the father, it is rated level I, nonappropriate.

e. (I-T) Though still aggression, this is a new behavior sequence (in relation to the actions of the German invaders) and is rated separately. Although one may sympathize with the actions of the hero, the murder in a revenge context is best rated as level I.

f. (I-T) This aggression too is sufficiently different from the former instances to be rated separately. Suicide is level I. Although the suicide is only briefly mentioned, it is still part of the central theme of the story and is rated thematic.

g. (I-N) This is a nonappropriate extraneous comment; it has nothing to do with the story. Since context is considered in rating drive level, and since the gun has already been established in the story as a murder and suicide weapon, the reference to the gun here is level I rather than level III.

2. (Card 10) (a) *A soldier going off to fight in the war,* and the woman with whom he is supposedly (b) *in love* is crying *and kisses him goodbye.* Much later, he returns to France and finds that his young lady has (c) *married someone else* in order to keep herself in (d) *food* and clothing. And he does nothing probably. Looks for (e) *food* and clothing for himself. No action. Well, of course the marriage—I could clear that. He could find her, and she, not having married for love, (f) *could give herself to him as well as to the person she married.*

a. (II-T) In the context of duty, war is rated level II.

b. (II-T) This is a direct expression of a libidinal impulse in a socialized way and in line with the main story theme.

c. (III-T) The later references to marriage in the story add nothing new to this first reference and are included in this rating. Marriage, when given in such a stylized way, is rated level III since only a very watered down expression of drive comes through into the story.

d. (II-T) Oral (food) content is different from the earlier rated libidinal content (kissing and marriage) and is rated as a separate unit. The reference to food provides motivation for the marriage under wartime conditions and, as such, is essential to the main theme of the given story. It is a direct expression of an oral need.

e. (II-In) Once again the reference to food is a direct oral expression in a socialized way. Here, however, it seems to be presented by *S* as a momentary pause in the story, before *S* gets on with the main theme; as such it is rated incidental. Incidental presentation by *S* in the story, rather than the rater's decision that a story could do without an item of drive content, is what requires an item of drive content to be rated incidental. Although the "food" content here is identical with the previously rated item, it is rated as a separate unit because it is a different degree of integration (incidental rather than thematic) and because it is a new behavior sequence carried out by another person; either of these reasons alone would be suf-

ficient to require a separate rating for this unit.

f. (I-T) Using the conventional values of society as the yardstick for deciding between level I and level II ratings, this is unsocialized drive expression and is rated level I.

3. (Card 13MF) This boy had (a) *time to kill* and stopped in a (b) *bar for a few drinks.* He kept (c) *noticing a girl* who was not pretty but *whose dress showed off her body well.* She came up to him after a while and suggested they go to her apartment. She was (d) *not what might be considered an actual prostitute* but she was lonely and wanted to do something to change her mood. After they had (e) *three or four drinks* at her place, she suddenly suggested (f) *they go to bed together.* The boy was naive and was taken aback, but felt his (g) *manly pride* required him to do so—so he did. As he's leaving the room now, he feels that sexual relations are not all that they are made out to be and that he can take it or leave it. But what he doesn't realize is that (h) *sex should never be an end in itself but only a means to an end with someone you love.*

a. (Not rated) Figurative expressions like this one are not rated.

b. (II-T) This is an instance where two similar instances of drive content are rated as one unit even though they would individually be rated at different levels (bar as level III and drinks as level II). The two form a consistent unit and are rated at the level of the strongest expression.

c. (II-T) Although "noticing" alone would be considered too distant from voyeuristic impulses to be rated, the total context provides a ratable voyeuristic-exhibitionistic theme. The expression is direct, socialized, and thematic.

d. (I-In) The denial here makes this incidental to the main theme. Although prostitution is negated, it is still level I.

e. (II-T) This is a new behavior sequence and is rated separately from the earlier oral content. The drinking here is still sufficiently socialized to get a level II rating.

f. (I-T) This rating includes the various references to intercourse in the story. Premarital intercourse, certainly in this non-love context, is rated level I.

g. (III-T) This is a thematic and highly derived expression of narcissistic libido.

h. (II-In) This is extraneous comment, but it manages to retain enough of a link to the story (as a "moral" of sorts) so that it cannot be rated nonappropriate. Hence, the incidental rating.

4. (Card 4) (a) *These people resemble Clark Gable and Gene Tierney.* The curtains give the impression this takes place in a house, but (b) *the pin-up picture* in the back seems to negate this. So I conclude that it's (c) *in a bar or a roadside stand or someplace like that,* and (d) *this waitress* is trying to prevent this truck driver from leaving. He's (e) *not too well liked* by the other drivers on the route, so one of them started a rumor that his (f) *girlfriend here was cheating on him.* The eyes of the girl make it clear that she'll convince him of the falseness of the rumors. (How does he feel?) He has a tinge of doubt, but he believes (g) *him . . . her . . .* basically, but he has doubt. The doubt makes him have a not very convincing (h) *fit of anger* but then they forget it.

a. (Not rated) Although this is irrelevant commentary, it has no drive content and is not rated.

b. (II-In) This is card description which gets into the story only peripherally, through providing a kind of atmosphere and backdrop; as such it is incidental. The voyeuristic implications of the pin-up picture seem direct enough to require a level II rating.

c. (III-In) All of this oral content is level III; no one is actually eating. Although this is part of the story, the way in which *S* presents it ("it could

be X or Y or Z") indicates that it is incidental even to *S* himself.

d. (III-T) "Waitress" is rated separately from "bar or restaurant" since it is given as part of the main story theme and is thus a new level of integration.

e. (II-T) The rating is level II. In spite of the euphemistic and negative mode of expression, this is still a direct expression of hostility.

f. (II-T) Applying conventional standards of morality: since the first man and the woman are unmarried, and since intercourse is not explicit here, the reference to "cheating" seems better described as level II than level I.

g. (III-N) This slip, involving a sexual confusion, gets rated although a slip in which the drive content is not evident in the slip itself would not be rated. The him-her ambiguity does not involve any direct drive expression and is rated level III.

h. (II-T) Although this is part of the inquiry, it is rated because it was not evoked directly by an inquiry question. (If the sequence had been, "how does he feel?," "angry," there would be no rating.) No physical violence is made explicit in the story, so the "fit of anger" remains level II.

## RELIABILITY AND VALIDITY

### *Reliability*

Eight TAT stories for each of 28 *S*s (14 male and 14 female undergraduates) were rated independently by two raters.[5] Ratings were carried out after an extensive period of rating practice by the two raters working together. However, once begun, the ratings were carried out without further checking or discussion. Final ratings were achieved by discussion of discrepancies between raters.

Of the 224 stories rated, there were 637 rated units of drive content. An agreement was counted when both raters rated the same unit of content or when both raters agreed that an entire story should get *no* ratings (the latter occurring in only 27 of the 224 stories). The raters agreed in 441 instances (69 percent of the time). Obviously this is far from perfect, but considering the material being rated (and remembering that agreement by chance alone, if such could be computed, would be near 0 percent), it seems at least adequate.

Inter-rater agreement for drive level and integration ratings was computed for only those instances where there was agreement on drive presence in the first place. There were 414 such agreements (441 less the 27 unrated stories). A summary of the agreements is given in the first three columns of Table I.

The number of units actually rated for the various levels of expression and degrees of integration varies widely. However, the percent of agreement is generally good. Agreement by chance alone would be 33 percent in each category. Only the percent of agreement for ratings of incidental use of drive (65 percent) falls below the 80 percent mark.

The last two columns of Table I give the number and percent of each type of rating finally assigned after discussion of discrepancies between raters. It can be seen that level II expression and thematic integration are by far the most commonly rated. It is likely that the proportion of incidental, nonappropriate, and level I ratings would increase in a psychotic population; the level II-thematic quality of the ratings here reflects the essential normalcy of the subject population. Another reason for the low total of incidental, nonappropriate, and level I ratings is the fact that half of the TAT stories used here had been written out by *S*s rather than given orally. It was found that the more extreme drive levels and more poorly integrated drive content came most frequently in the orally given stories. Writing allows for more control operations; thus whether to use written

[5] I would like to thank Paul Lippmann for his assistance in carrying out these ratings.

TABLE I. Inter-rater Agreement and Final Ratings for Drive Level and Drive Integration Ratings

| | Number Units* | Number Agreed** | Percent Agreed** | Final Number Rated | Final Percent Rated |
|---|---|---|---|---|---|
| Level I expression | 76 | 62 | 82 | 79 | 15 |
| Level II expression | 208 | 167 | 80 | 283 | 52 |
| Level III expression | 130 | 111 | 85 | 180 | 33 |
| Total for levels | 414 | 340 | 82 | 542 | 100 |
| Thematic use of drive | 376 | 358 | 95 | 474 | 88 |
| Incidental use of drive | 20 | 13 | 65 | 34 | 6 |
| Nonappropriate use of drive | 18 | 16 | 89 | 34 | 6 |
| Total for integration | 414 | 387 | 93 | 542 | 100 |

* Number of units where there was agreement on drive presence initially.
** Based on the degree to which rater II (PL) agreed with rater I (FP).

or oral stories is a methodological question to be considered when the manual is applied to other studies.

*Validity*

Q-sort ratings were available on the 14 males (one of whom was omitted from this analysis because additional data for a related study were not available from him). Correlations between the TAT manual scores and rankings derived from the Q-sorts were carried out to determine at least tentatively some measure of the validity of the TAT scores.

Q-sort ratings were obtained as follows. Each *S* had been given, in addition to the TAT, a Rorschach test and a Wechsler-Bellevue; each had written an autobiographical statement and each had been extensively interviewed by a trained clinical psychologist. Two raters, first independently and then by consensus, used all of these materials to evaluate and then rate *S* on six Q-sorts (Affects and Inner States, Thought Processes, Motives, Defenses, Interpersonal Behavior, and Identity and Self-Attitudes), each containing 30 items to be rated on a 6-point scale and forced into a normal distribution. A syndrome analysis, following Horn's (1944) technique was carried out on the 180 variables and produced 50 item-clusters and 51 residual single items. Final cross-subject rankings (derived from the Q-sorts) of the 101 variables were compared by rank correlations to the TAT manual scores. The feasibility of using ipsatively derived Q-sorts to form a normative ranking of *S*s is suggested by Block's (1957) work with such material.

Two main factors contribute to the tentative and exploratory nature of the validation correlations. First, of the large number of correlations carried out (101 for each TAT score) only a small number were statistically significant; chance may thus be an important factor here. The fact that the items which do correlate by and large make good theoretical sense and form internally consistent clusters mitigates this problem somewhat. The second point to be borne in mind is that the TAT was used by the raters along with the four other available protocols in making the Q-sort ratings; thus there is some contamination with the TAT manual scores. However, for many of the variables which correlate significantly the material for making the rating would seem to come from the Rorschach, the interview, or some other protocol rather than from the TAT, and in at least one case (Table IV, No. 8) the correlation is opposite to what one might expect had the judgments been made naively from the TAT alone. Be this as it may, it seems most conservative to interpret the correlations as indications at least that the Rorschach, the Wechsler-Bellevue, the interview material, and the autobiography supported and did not contradict any cues which came from the TAT. At the time the

raters made the Q-sorts they were unaware that they were eventually to be correlated with the TAT manual.

Results are presented in three tables. For this exploratory analysis, all correlations at the 10% level or better (rho $= .48$, two-tailed; $N = 13$) are reported. The tables are set up to indicate both extremes of the Q-sort ranking in relation to the extreme on the relevant TAT manual score. Correlations are therefore given without signs. In some cases the two extremes of a Q-sort were differentially defined but in other cases one extreme is simply the absence of the other (i.e., X and not-X). There is some near-duplication of items within tables; this derives from the initial breakdown of the Q-sorts into six partially overlapping categories.

Table II presents the correlations between the drive presence ranking on the TAT manual and the rankings derived from the Q-sorts. The drive presence ranking is based upon the total number of units rated for each *S* in the final consensus rating.

*S*s with high drive presence tend towards emotionality, expressiveness, and flux. An expressive quality characterizes thinking, communication, and relationships (Nos. 1 to 5). At times, the expressiveness has a distinctly positive and adaptive character including spontaneous affect, insightfulness, and meaningful relationships (Nos. 6 to 8). At times this tends towards an excessive fluidity both in emotional control (Nos. 9 and 10) and in identity (Nos. 11 and 12). Thus, high drive presence in the TAT, *apart from* considerations of the *control* over drive expression, reflects an expressive quality, a personality in flux, which may have either positive

TABLE II. Rank Correlations between TAT Drive Presence Ratings and Personality Variables

| | Rho | Characteristics of *S*s with High Drive Presence | Characteristics of *S*s with Low Drive Presence |
|---|---|---|---|
| 1. | .62** | Communicates ideas clearly and effectively in colorful yet appropriate language. | Thinking is blocked and inhibited. |
| 2. | .87*** | Not quiet and not uncommunicative. | Quiet and uncommunicative. |
| 3. | .64** | Vivid imagery. | Minimal and stereotyped fantasy; clings to reality. |
| 4. | .75*** | Does not use inhibition as a main defense. | Uses inhibition as a main defense. |
| 5. | .84*** | Is not inhibited or uncommunicative; does not have a rigid self-concept. | Is inhibited, uncommunicative, and has a rigid self-concept. |
| 6. | .78*** | Balanced, flexible, and spontaneous affect. | Little anxiety tolerance. |
| 7. | .52* | Has insight into self. | Lacks insight into self. |
| 8. | .52* | Relationships with people neither tenuous nor marginal. | Relationships with people tenuous and marginal. |
| 9. | .77*** | Emotionally labile (but not necessarily insincere). | Emotionally flat. |
| 10. | .75*** | Depression: depressed, ashamed, self-abasing and self-blaming. | Not depressed. |
| 11. | .58** | Role plays, tries to reassure self of acceptability and competence (unstable identity). | Identifies self with values of a professional or occupational group in an appropriate manner. |
| 12. | .50* | Identifies with the underdog. | Does not identify with the underdog. |

* Significant at 10% level; two-tailed test.
** Significant at 5% level.
*** Significant at 1% level.

or negative implications for personal functioning. It should be noted that these results are for an essentially normal group of *Ss*; in a psychotic population, high drive presence apart from considerations of control is likely to be much more directly associated with pathology.

In marked contrast, low drive presence, even apart from the question of control over that which is expressed, appears to reflect a pattern of inhibition, overcontrol, and rigidity. These individuals seem to be out of touch with the inner resources of personality: thinking is blocked (Nos. 1, 3, and 7), and control operations seem both excessive and shaky (Nos. 4 and 6). There is also a blocking of the resources for expressive contact with the world outside: both emotionality (Nos. 9 and 10) and relationships (Nos. 2, 5, and 8) are minimal. In this over-all context, and especially in the light of the strong correlation with rigid self-concept (No. 5), it seems most reasonable to interpret the suggestions of a "professional" identity (Nos. 11 and 12) as reflections of a prematurely rigid identity formation in these *Ss* who are, after all, only adolescents in the first year of college.

Table III presents correlations between the drive integration ranking and the rankings derived from the Q-sorts. The over-all summary score for drive integration (described above in the section on summary scores) reflects a tendency towards thematic use of drive material at the one extreme and towards nonappropriate use of drive material at the other.

*Ss* with well-integrated use of drive content (*amount* of drive content held constant) present a general picture of smooth functioning, perhaps at the

TABLE III. Rank Correlations between Summary Scores for Drive Integration and Personality Variables

| | Rho | Characteristics of *Ss* with Well-Integrated Use of Drive | Characteristics of *Ss* with Poorly-Integrated Use of Drive |
|---|---|---|---|
| 1. | .56** | Skillful and orderly reasoning. | Thinking is vague and fuzzy, with neologisms and distortions. |
| 2. | .57** | Efficiently ordered thinking and dependable judgment. | Thinking not efficiently ordered; undependable judgment. |
| 3. | .84*** | Concentrates easily. | Does not concentrate easily. |
| 4. | .54* | Concepts are neither loose nor autistic. | Concepts loose or autistic. |
| 5. | .49* | High need play-mirth. | Low need play-mirth. |
| 6. | .63** | Not oversensitive to challenge and threat. | Oversensitive to challenge and threat. |
| 7. | .68*** | Does not fear privation; low need harm-avoidance. | Fears privation; high need harm-avoidance. |
| 8. | .50* | Not characterized by failure of defense. | Under stress becomes unadaptive and retreats to earlier modes of functioning; regression and failure of defense. |
| 9. | .72*** | Does not easily experience anxiety; characteristically bland or serene. | Anxiety is stormy and diffuse. |
| 10. | .52* | Suffers guilt over hostility and over heterosexual impulses. | Does not suffer guilt over hostility and heterosexual impulses. |
| 11. | .69*** | Does not use somatization as a main defense. | Uses somatization as a main defense. |
| 12. | .81*** | Relates to people narcissistically behind a facade of warmth. | Does not relate to people narcissistically behind a facade of warmth. |
| 13. | .60** | Submits to maternal figures. | Does not submit to maternal figures. |

* Significant at 10% level; two-tailed test.
** Significant at 5% level.
*** Significant at 1% level.

price of lesser involvement. Thinking is efficient and proceeds without disruption by anxiety (Nos. 1 to 4), expressive needs find their outlet through relatively controlled channels (No. 5), and a basis for steady and adequate personality functioning appears well established (Nos. 6 to 8). Coupled with this is some tendency towards experiencing conflicts internally and psychologically (Nos. 10 and 11). However, the strong correlation with "relates self to people narcissistically behind a facade of warmth" (No. 12), coupled with the trend towards possible blandness (No. 9), suggests that these *Ss* may achieve their adjustment largely through avoidance, lack of involvement, and minimization of affective experience. Correlation No. 13 ("submits to maternal figures"), though not inconsistent is at some distance from the other correlations; it may suggest possible sources of the contemporary characterological trends.

*Ss* with poorly integrated use of drive material appear to be characterized by anxiety and disruption. Intellectual processes cannot be used effectively for control and also reflect the disruption of adaptive functions by anxiety (Nos. 1 to 4). Affective life is frequently unpleasant, characterized by anxiety rather than more controlled and positive feelings (Nos. 5 and 9). The picture is one of a personality under constant stress (Nos. 6 to 8).

Although *Ss* using poorly integrated drive content in many ways present the "sickest" picture, an emotional health-emotional illness continuum does not adequately describe the difference between these two groups of correlations. Rather, the difference lies in the nature of control operations, their effectiveness, and the specific problems that each kind of control generates. While the well integrated use of drive is associated with many reflections of a potential for adequate functioning, there are also tendencies towards avoidance and guilt —thus, at times a relatively stabilized character structure with neurotic and narcissistic elements. The *Ss* who use drive that is poorly integrated in the TAT appear to be characterized by: (1) free-floating anxiety and failure of defense (Nos. 8 and 9); (2) resort to somatic rather than psychic expression of conflict (Nos. 10 and 11); and (3) a potential for psychotic thought disorganization (which in fact took place in one of these *Ss* sometime after this research was carried out).

Table IV presents correlations between the summary scores for level of drive expression and the rankings derived from the Q-sorts. The summary scores for drive level (described above in the section on summary scores) reflect a tendency towards modulated drive expression at the one extreme (high on indirect-disguised drive expression and low on direct-unsocialized drive expression) and towards unmodulated drive expression at the other (low on indirect-disguised drive expression and high on direct-unsocialized drive expression). A ranking based on level II scores alone (direct-socalized drive expression) did not tend to give significant correlations.

*Ss* who modulate the level of drive expressed appear to be characterized by a relatively balanced relationship between expressive and control processes. This is reflected in a relatively free intellectual and esthetic expressive style (Nos. 1 to 4), a flexible identity (No. 5), non-competitive peer relationships (No. 6), and adequate controls over impulses (No. 7). There seems to be both a tendency and a capacity to experience and work through conflicts internally; fantasy and activity stemming from the self (Nos. 8 and 9) rather than introjection of aspects of the external environment (No. 10) are used to cope with feelings and impulses. Coordinate with this is a tendency to experience conflict within the self (No. 11). The over-all picture is of a relatively free intellectual capacity and an in-

TABLE IV. Rank Correlations between Summary Scores for Level of Drive Expression and Personality Variables

| | Rho | Characteristics of *Ss* with Modulated Drive Level | Characteristics of *Ss* with Unmodulated Drive Level |
|---|---|---|---|
| 1. | .57** | Skillful and orderly reasoning. | Thinking is vague and fuzzy, with neologisms and distortions. |
| 2. | .70*** | Thinking is neither naive nor conventional. | Thinking is naive and conventional. |
| 3. | .49* | Does not use words pompously, stiltedly, ostentatiously. | Use of words is pompous, stilted, and ostentatious. |
| 4. | .51* | Intellectual-esthetic creativity; high need understanding, need sentience, need construction. | Low intellectual-esthetic creativity; low need understanding, need sentience, need construction. |
| 5. | .64** | Self concept not rigid. | Self concept rigid. |
| 6. | .64** | Does not compete punitively with peers of same sex. | Competes punitively with peers of same sex. |
| 7. | .52* | Fear of losing control over sexual impulses is minimal. | Fear of losing control over sexual impulses is strong. |
| 8. | .61** | Aggressions are pent up and dominate fantasy. | Aggressions are not pent up and do not dominate fantasy. |
| 9. | .52* | Redoubling of efforts when depressed. | Helpless reaction to stress. |
| 10. | .56** | Does not use introjection as a main defense. | Uses introjection as a main defense. |
| 11. | .53* | At odds with self and has major internal conflicts; feels isolated, special, or unusual. | Not at odds with self; does not feel isolated, special, or unusual. |

* Significant at 10% level; two-tailed test.
** Significant at 5% level.
*** Significant at 1% level.

ternal experience of conflict.

*Ss* using unmodulated drive expression show two kinds of characteristics which may be conceptualized as reflections of a tendency towards impulsive discharge and mechanisms of adjustment to this. The tendencies towards discharge are indicated in competitive social relationships (No. 6), loose thinking (No. 1), a fear of loss of control (No. 7), and the absence of a tendency to discharge impulses in internalized ways, such as fantasy (No. 8). Coupled with this is a weakening of the inner resources for control either through intellect (and sublimation) (No. 4) or through other defenses (No. 9). The protective and adjustive mechanisms all have a character of brittleness and pretense as though "fastened on" without having been produced by an ego successfully in control of impulses. These include a rigid and conventional self concept (Nos. 5 and 11), resort to external bases for control through introjection (No. 10), and a tendency towards seemingly-safe thinking (Nos. 2 and 3).

Thus, although tentative, the correlations with the personality variables are in general accord with a priori expectations. The one exception to this is the better correlation of the generally adaptive syndrome of correlations with highly modulated drive content than with level II (direct-socialized) drive content. Correlations with the levels and integration scores, each of these conceptualized as an index of ego control, present over-all pictures in some ways similar to one another—and this in spite of the fact that the levels and integration rankings are statistically independent (rho is only .14). In fact, all three major summary scores are unrelated statistically; total drive presence correlates with drive integration .10 (rho) and

with drive level .09 (rho). The scores thus have some measure of reliability, validity, and independence.

## SUMMARY

The present paper describes and illustrates a manual for rating the use of drive content in TAT stories. The manual was developed (and successfully applied) in a research context and is geared primarily to research uses. The rationale for all rating and scoring derived from psychoanalytic theory, and particularly from "ego psychology"; a theoretical rationale for all major scores is presented.

Three main types of ratings are described. The first of these represents the total number of reasonably direct derivatives of aggressive and libidinal drives which appear in ideational form in the manifest content of the TAT stories. The second two ratings, reflecting the degree to which drive content is integrated into the stories and the degree to which drive content is modulated in intensity and socialized in aim, were conceptualized as indices of ego control over drive expression. Various scores for summarizing the ratings were described.

Material supporting the general independence, inter-rater reliability, and validity of the main scores was also presented.

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# Types of Movement in Children's Rorschachs

JOHN M. REISMAN
Rochester Child Guidance Clinic

One of Piotrowski's (1957) intentions has been to give interpretations to Rorschach determinants which lend themselves to empirical test. This study centered on that aspect of perceptanayltic theory concerning movement responses. Piotrowski interpreted human movement (*M*) as tendencies to assume the same attitude in dealing significantly with others; animal movement (*FM*) as tendencies which influence overt behavior only in states of lowered integration or diminished consciousness, e.g., intoxication or fatigue; inanimate movement (*m*) as tendencies which the person feels are desirable but unattainable and which thus are never acted-out.

The "tendencies" of the movement responses were said to be primarily indicated by three types of action. Extensor movements were characterized by overcoming the force of gravity and expanding in space; they were interpreted as tendencies toward self-assertion. Flexor movements were characterized by giving-in to gravity and/or shrinking in space; they were intepreted as tendencies toward compliance. Blocked movements were characterized by tension or acting in opposite directions; they were interpreted as tendencies toward indecisiveness.

Drawing from his interpretations, Piotrowski stated, "Since the *M* and *FM* tendencies press for outward manifestation and the *m* tendencies do not, the life roles expressed by the *m* are incompatible with the life roles disclosed in the *M* and *FM*. Consequently, the types of movement in the *m* should always be different from the movement types of the *FM* and particularly of the *M*." (1957, p. 211).

This last statement was supported by the analysis of a few Rorschach protocols and little else. While Piotrowski recognized the lack of empirical verification, he explained that it was due to the rarity of the occurrence of *m* as a determinant. The purpose of this study was to test his hypothesis using Rorschachs obtained from children referred to a child guidance clinic. The hypothesis states: If a child's *m* is of the extensor (flexor, blocked) type, then his *M* and *FM* are not of this type.

Although Piotrowski formulated his theory largely on the basis of work with adults (1952), it was considered appropriate to test his hypothesis using a sample of children for two reasons. First, Piotrowski presented his hypothesis in the form of a universal generalization, i.e., it is unqualified and is thus supposed to be predictive of all Rorschachs regardless of the age of the person taking the test. Second, Piotrowski's ideas about movement have been used to interpret the records of children (Ames, Learned, Metraux & Walker, 1952) and it was of importance to try to determine whether such use of his theory was valid.

## METHOD

Rorschachs were obtained from folders of children referred to a child guidance clinic. For inclusion in the sample, the child had to be evaluated as of at least low average intelligence. Also his protocol had to contain at least one *m* and one *M* or *FM* which were identical with or highly similar to the examples which Piotrowski furnished of extensor, flexor, and blocked types of movements (1957). Accordingly, a large number of movement responses were eliminated from

consideration. While this procedure tended to bias the results in favor of supporting the hypothesis, it was considered more justifiable and fair to the testing of the hypothesis than arbitrarily classifying ambiguous or complex responses.

From 80 Rorschachs, only 24 were found which satisfied the above criteria. In this sample, there were 17 boys and 7 girls. Ages ranged from 6-15 with a mean of 10 years. IQ scores ranged from 81-131, with a mean of 105. None of the children was considered psychotic but all were considered to manifest some form of psychiatric disturbance. While it was recognized that this sample was far from homogeneous, it should again be pointed-out that Piotrowski's hypothesis was unqualified and would thus be applicable to all Rorschachs.

To test for reliability, all movement responses used in the study were extracted from their records. They were then written verbatim in a random order so that it was impossible for judges to know which responses belonged to the same record. This was done to minimize any effects of bias for or against the hypothesis. Two judges experienced in the use of the Rorschach categorized all the responses as to type using the same criteria employed by *E*[1]. Judge A and *E* had 90% agreement; there was 80% agreement between Judge B and *E*; there was 85% agreement between the two judges. Disagreements occurred mainly in the categorizing of what *E* considered to be blocked type responses.

As a measure of intra-judge reliability, three months following his original categorization, *E* rescored all responses as to type. There was 97% agreement between the two scorings.

## RESULTS

The twenty-four children produced a scorable total of 22 extensor, 9 flexor, and 5 blocked *M* responses; 22 extensor, 2 flexor, and 2 blocked *FM* responses; and 23 extensor, 9 flexor, and 2 blocked *m* responses. These results were in agreement with Piotrowski's clinical impression that the majority of *m* responses were of the extensor type and with the findings of Ames, et. al. (1952) that the extensor type movement was more frequent than the flexor in the records of children. Within the sample, there were no marked or statistically significant differences in types of movements produced between boys and girls, children above and below ten years of age, and children above and below an IQ of 105.

According to the hypothesis, if a child's *m* was of one type, then his *M* and *FM* should be of another type. Of the 24 records, 19 of them on the basis of *E's* scorings, 18 on the basis of Judge A's, and 21 on the basis of Judge B's had *m* and *M* or *FM* responses of the same type. These results were in direct opposition to what would have been predicted from the hypothesis.

Since Piotrowski emphasized the differences in type between *m* and *M*, the hypothesis was reformulated: If a child's *m* is of the extensor (flexor, blocked) type, then his *M* is not of this type. Two records contained no *M*. Of the 22 records which did, 15 according to *E*, 16 according to Judge A, and 18 according to Judge B had *m* and *M* responses of the same type. Again the results were directly opposite to that predicted by the hypothesis. Furthermore, if it had been predicted that a child's *m* is of the same type as his *M* or *FM*, this hypothesis would have been supported ($X^2=7.04$; $P<.01$).

## DISCUSSION

The findings of this study not only fail to support Piotrowski's interpretation of *m* but are directly opposite to what would have been expected from his hypothesis. It might be argued that the results were biased in

[1] The author wishes to express his appreciation to Dr. Bernard Aronov and Mrs. Gladys Broude, who served as judges.

opposition to the hypothesis since the records may have contained many instances where *M* or *FM* or *m* responses were of more than one type. However, only 8 of the 24 records had *M* or *FM* or *m* responses of more than one type and even among these 8 were found two of the five which, according to *E*, were in accordance with the hypothesis. Therefore the majority of the records had movement responses which were either exclusively extensor or flexor.

These findings are limited in that the sample consisted of disturbed children. Whether similar results would have been obtained had a sample of "normal" children or adults been used is open to question. However the findings of Ames, et. al. (1952) would lead one to expect that similar results would be found with a sample of "normal" children. If nothing else, the results of this study indicate that Piotrowski's interpretation of *m* responses is not applicable to the analysis of Rorschachs of disturbed children, i.e., that *m* in these children is not indicative of tendencies which the child feels are desirable but unattainable. On the contrary, the majority of the children in the sample were referred precisely, because they did express only too well their *m* tendencies. What the results suggest is correspondence or positive correlation between the types of movement of *m*, *M*, and *FM* in children. They further serve to point-up the questionable validity of analyzing children's Rorschachs on the basis of the same "nuclear" interpretations of test variables as used with adults (Klopfer, et. al., 1956).

## Summary

On the basis of Piotrowski's interpretations of movement responses, the following hypothesis was tested using a sample of Rorschachs obtained from 24 disturbed children: If a child's *m* is of the extensor (flexor, blocked) type, then his *M* and *FM* are not of this type.

This hypothesis was not supported. On the contrary, the results supported an opposite view that, with disturbed children, if a child's *m* is of the extensor (flexor, blocked) type, then it is highly probable that his record contains *M* and *FM* of this type. It was concluded that Piotrowski's interpretation of *m* is not applicable to the analysis of the Rorschachs of disturbed children. The results further served to emphasize the questionable validity of using the same "nuclear" interpretations of Rorschach test variables with both children and adults.

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# Inquiry: Partial or Total

STANLEY ROSNER
Child Guidance Clinic of Greater Bridgeport, Inc., Bridgeport, Connecticut

In a recent article by Feldman (1958) the important caveat is advanced that the blanket interpretations which form part of psychoanalytic theory must finally depend upon the patient's own associations. Feldman writes: "I use this term (blanket interpretation) for interpretations that may be valid and correct when applied to certain analytic material at the proper time, but that are often misapplied by indiscriminate use . . ." (p. 206.)

Thus symbols, protestations, negations and wishes may or may not always represent what we believe they represent in terms of classical psychoanalytic theory. Freud (1910) among others, has offered ample evidence to indicate that interpretation of symbolic content, fantasies, wishes, etc., without the patient's associations, may lead to difficulties because: 1. The patient may not be ready to cope with such interpretations and, 2. Symbols, devoid of the individual's associations, may not always represent what we think they do. The concern of this paper is with the second of these and particularly with respect to Rorschach testing.

The increasing tendency to emphasize Rorschach content has been noted by Piotrowski:

> It has recently become the practice to concentrate upon an analysis of the pictorial content of perceptanalytic responses or the verbal form in which they are expressed rather than upon an analysis of the Rorschach record in terms of formal aspects. Many psychologists never score their Rorschach records and rely almost solely upon content analysis. (1957, p. 324)

Brown (1953) and Lindner (1956) have chosen responses which were given to particular blot areas and offered interpretations of the content of such responses. Phillips and Smith (1953) have offered interpretations to certain animal, human and inanimate contents regardless of the blot area involved. These authors have qualified their suggested interpretations indicating that content interpretation be viewed as part of the total personal, behavioral, and test constellation. However, these authors have been criticized for their methods of supporting their content interpretations by referring to such poorly defined concepts as "empirical correlation" and "normative data." (Charen, 1953; Schafer, 1954.) Thus, Schafer (1954, p. 118) writes:

> So long as they (Phillips and Smith) support their claims by reference to data, these authors cannot be criticized for carrying on "wild analysis" but one wonders at the nature of "normative data, however unrefined" that can organize such a multiplicity of complex and elusive trends and observations around single response categories.

It seems to this writer, however, that the emphasis upon obtaining sufficient statistical data to support a particular interpretation of a particular content on the Rorschach is not the issue, but rather reflects a misplaced emphasis and makes a fetish of objectivity. It is akin to arguing that if a great many patients view a spider as the symbol of the wicked mother, that we are justified in making the blanket interpretation covertly or overtly that whenever the spider symbol arises, it represents the wicked mother. However, as Feldman (1958) indicates, this need not always be the case and must finally depend upon the patient's associations.

On purely logical grounds, such blanket interpretations lead to a cycle of repeatedly furnishing evidence to support one's ideas rather than enabling us to correct ideas which may

be of limited validity or productivity.

More important, however, is the question as to whether the Rorschach is viewed as an instrument which we seek to make objective with stereotyped definitions of formal (scoring) and content categories, or one which we seek to enable us to comprehend and grasp the unique characteristics of a unique individual to the greatest possible extent. It is true, of course, that the harried clinician will find it quicker and easier to inquire only enough to satisfy his scoring requirements and then in writing his report to refer to a standardized list of interpretations. We are faced with a situation in which the more objective and standardized we make the Rorschach, the less unique information we obtain; the more subjective and open-minded we make the Rorschach, the more unique information we obtain.

This is not to question the notion that in many or even in most instances a particular content may represent a particular interpretation. The point is that this need not always be the case and we run the risk of error and/or of losing a wealth of material about our patients if we confine ourselves to usual or stereotyped interpretations.

The final interpretation of content material depends upon the associations that can be obtained from the patient. In the case of the Rorschach such associations can best be obtained during the inquiry. While we are warned against over-inquiring or asking leading questions, this is not to deny that once the formal requirements for scoring the response are obtained (i.e., location, determinants, content category), it is possible to find out more about the meaning of a particular response.

A few examples may be in order. A twenty-year-old female patient offered several responses which included the content, hair. It would have been a simple matter to conclude that her emphasis upon hair reflected virility strivings and feelings of impotence. However, her elaborations indicated that to this young woman, hair represented a major bone of contention between herself and her mother, who constantly criticized and degraded her hair style.

Critics might respond to this by stating that the patient's arguments with her mother must represent the virility strivings suggested at first glance. No one can deny, however, that there is a vast difference between the general term "virility," on the one hand, and all the nuances which emerged about the mother-daughter relationship, on the other hand.

Another striking example is shown in the popular butterfly response to Plate I. On inquiry, it is seen as a butterfly that is flying and includes the entire card. At this point, inquiry could be dropped with a W, FM, A, P scoring. However, when the patient is asked what the butterfly brings to mind, the following associations are obtained: "It looks like a butterfly that is falling apart, jagged. (Q. How did it happen?) Like it got caught in something and was fighting and got torn. It looks like it was trying to fly away, to get away."

Here, again, inquiring rather than simply accepting a response as given, proves to be extremely helpful. While nothing new about the exact meaning of "butterfly" is obtained, it is interesting to note that this patient was raised in an orphanage from which she had attempted to escape on several occasions. Upon being returned, she received severe physical punishment resulting in permanent scars. It is very possible that the butterfly here rather than meaning anything in particular as an animal content may well have represented this girl's reactions to a restricting situation such as may have been presented by the first Rorschach plate and which may, in turn, also have been associated in her mind with her stay in the orphanage, the physical abuse, and the desire to escape. How much more meaning-

ful this response is than might appear at first glance. Brown's interpretation of the "frayed butterfly" to Plate I (Brown, 1953, p. 259) certainly is very appropriate here, but does not nor could it be expected to highlight the nuances in this particular case.

Phillips and Smith's (1953, p. 120) comment concerning the "butterfly" content—"A popular content, hence one not useful in differentiating among normals"—does not touch upon the possibilities in this case. This is all by way of saying that there is no substitute for a thorough inquiry.

*To summarize*: The notion is advanced in this paper that stereotyped content analyses of Rorschach responses based upon normative data is not very different from making blanket interpretations in dream analysis or in psychotherapy. This procedure is indefensible in the psychotherapeutic process and it is suggested that it is just as indefensible in the testing situation. While leading questions and over-inquiring concerning the formal aspects of the Rorschach are to be avoided, it is suggested that the patient's associations to some or most content given on the Rorschach is usually very helpful in enabling us to understand much more about the patient. It is also suggested that while normative data on content are interesting and helpful from an experimental and learning point of view, at the present time when the Rorschach is used as a diagnostic test instrument in individual cases, the most valid findings are to be gleaned from the patient's own associations obtained during the inquiry.

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# Womb Fantasies in Heroin Addiction: A Rorschach Study

LLOYD H. SILVERMAN
New York University and Jewish Board of Guardians
and
DORIS K. SILVERMAN
Hunter College

During the past thirty years only three groups of investigators have used projective tests to study the personality factors that characterize drug addicts. The first to report findings were Merser and Funderburg (1947) who did a case study on one addict. Little was done with the projective material, however. The patient was described as an immature, inadequate, impulsive, and unstable individual, with a verbal facade, who let herself be easily influenced by persons and circumstances.

Test findings on groups of addicts were presented by Zimmering, Toolan, Safrin, and Wortis (1951; 1952) and by Knight and Prout (1951). A series of surface personality variables were described as characterizing the addicts. The only characteristics that were reported by both groups of authors were: easily evoked anxiety, a narcissistic orientation, feelings of inadequacy, and the absence of a solid masculine identification. The results were presented in summary form with no evidence offered for the conclusions drawn. The failure to present evidence was a particularly serious error since "blind" evaluations of the test material were not made and systematic comparisons with control groups were not reported. Thus, these findings until checked in a much more rigorous manner, are open to serious question.

A methodologically sounder piece of research was reported by Gerard and Kornetsky (1955) who studied a group of addicts to test hypotheses that they had formulated in an impressionistic manner in two earlier papers (1954a; 1954b). Thirty two adolescent addicts at Lexington, Kentucky were given Rorschach and figure drawings which were compared with the test results of 23 controls. The control subjects were similar to the addicts in age, ethnic background, and exposure to opiate use in their communities. The Rorschachs were appraised in terms of signs only. Significant differences between the two groups for certain signs were said to indicate that comparatively speaking, "the addicts showed little ability to respond with fantasy or with emotionally determined material . . . the addicts lack the richness and variety of resources necessary to function in novel unstructured or stressful situations" (1955, p. 466). A comparison of the figure drawings of the two groups revealed that the addicts showed greater regression in projection of their body image, greater rigidity, fewer "normal" drawings and fewer indications of culturally acceptable roles than did the controls. This study, however, has a major methodological weakness. The control subjects were *paid* for participating in the study while the addicts were not. Many of the variables for which significant differences were found (e.g. number of R, M, and Sum C on the Rorschach and degree of differentiation of the figure drawings) may well have been a function of the resulting difference in motivation of the two groups. Also, although all the subjects were given psychiatric diagnoses, the two groups were not equated for degree of pathology. The addicts were much sicker as evidenced, for example, by the fact that 50% were diagnosed as schizophrenic while this was

true of only 22% of the controls. Thus the most that could be said on the basis of their findings was that drug addicts show a greater number of test signs of psychopathology than do non-drug addict, non-psychiatric patient controls. No legitimate claim could be made for the unearthing of specific personality variables that differentiate drug addicts from other kinds of equally disturbed individuals.

In the current research, an attempt will be made both to correct the methodological flaws of the earlier studies and to deal with more specific personality variables than have heretofore been attempted.

*Procedure:*

This research was initiated when one of us (LHS) was employed as staff psychologist at the Psychiatric Clinic of the Court of Special Sessions of the City of New York. During one period of time he had occasion to clinically evaluate a few heroin users via psychological tests. In their Rorschachs he noted what seemed to be an extensive amount of imagery that seemed to refer symbolically to properties of the intrauterine state. This finding led him to examine the Rorschach records of other heroin users he had tested in the past. Altogether 13 records were examined and the number of responses of the kind just described seemed much greater than patients usually give. In order to determine if this impression was valid and one that would stand up to a rigorous test, the following controlled study was undertaken.

*Selection of Cases:* The Probation Department of the Court of Special Sessions was asked to refer all heroin users that came under their jurisdiction to the Psychiatric Clinic for Rorschach testing[1]. (We decided to eliminate any subjects who gave fewer than ten responses, but in only a few cases was this necessary.) Thirty Rorschachs were collected, all of males who had committed crimes that brought them to court where they were eventually placed on probation. All used heroin intravenously and the shortest duration of time that the drug had been taken was two months by one subject, and he had taken five or six shots a day. One half of the subjects admitted using heroin for at least one year. The age, race, education, and diagnosis of each of these subjects are presented in Table I.

The 30 control Ss were also young adult males who had committed crimes that brought them to court where they were placed on probation and referred to the Psychiatric Clinic for evaluation. These non-drug-users (as attested to by the subject *and* his probation officer) were also persons for whom heroin was readily accessible. This criterion was thought necessary because we assumed that the determination of who becomes a drug addict is based on degree of accessibility of the drug as well as on personality factors. In order for a subject to be considered as someone to whom drugs were readily accessible either of two criteria had to be met: Criterion I: The youth was a member of a "gang" in which at least a few of the members were heroin users. In this environment he had every opportunity to take heroin and other drugs but never did. Eight subjects met this criterion.

Criterion II: The youth lived in a part of the city in which large numbers of drug users are known to reside. Manhattan is divided into about 90 health areas and a listing has been made of those areas in which the greatest proportion of cases of drug usage have been reported on the court

[1] We would like to express our gratitude to Mr. Alfred Cappisillo of the Probation Department of the Court of Special Sessions and to the probation officers under his charge, and to Mr. Edward Preble, group worker, currently affiliated with the New York School of Psychiatry for their cooperation in helping us secure subjects for this study.

dockets from 1952 to 1955[2]. The 22 subjects who met criterion II had all resided for years in one of the thirteen health areas in which there was the highest proportion of such arrests. Thus, it seemed reasonably safe to assume that they too could have taken drugs if they so desired.

It was further thought desirable that the control subjects chosen should be similar to the heroin user group in age, race, education, and diagnosis. In large measure this goal was accomplished (see Table I).

Some of the control records came from subjects who were especially tested for the purpose of the research. Other records were taken from the files of patients who had already been tested at the clinic. In the latter cases, attempts were made to choose records that matched the heroin user records for total number of responses as well as satisfying the other criteria already described.

*Method of Scoring the Rorschach Content:* All the Rorschachs were administered by one of us (LHS) who knew which records were given by heroin users and which by controls. Thus, in order to prevent bias from entering into the scoring of the records, the other author did all the scoring without her knowing the group from which they came.

We decided, before the study proper was undertaken, to have each Rorschach record scored for two main content themes which we hypothesized would differentiate the heroin user group from the control group. The rationale for the analysis of Rorschach content in terms of themes has been aptly presented by Schafer (1954, pp. 114-139).

Category I included those responses that we judged to involve imagery that symbolically (or directly) referred to properties of the intrauterine state. Responses in this cate-

TABLE I—Age, Race, Education and Diagnosis of Heroin and Control Groups

| | Mean Age | *Race* | | | Mean Years of Education | *Diagnosis* | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | White | Negro | Puerto Rican | | Schizophrenia | Personality Disorder | Psychoneurosis | No Psychiatric Condition |
| Heroin Users (N-30) | 19.8 (range 17-27) | 9 | 9 | 12 | 9.9 | 3 | 22 | 4 | 1 |
| Controls (N-30) | 18.9 (range 16-26) | 9 | 10 | 11 | 9.8 | 3 | 24 | 2 | 1 |

[2] This information has been compiled in a book on drug addiction by I. Chein, D. Gerard, R. Lee, and E. Rosenfeld which is currently in preparation.

gory fell into four subcategories: (1) responses involving enclosures or living things in enclosures; (2) responses involving living things that were joined to other living things; (3) responses involving bodies of water, or things that were submerged in water or that habitually reside in water; (4) miscellaneous responses that were thought to have aspects with symbolic intrauterine meaning that could not be scored under any of the three aforementioned subcategories.

A score of "2" was given to a response if it was felt that it almost certainly belonged in one of the four subcategories. A score of "1" was given if it was thought likely that the "enclosure", "joined together", "water", or "miscellaneous intrauterine" implications were not essential in determining the response. Examples of responses scored as "2" and "1" are given below for each of the four subcategories under category I.

1. "Enclosures": Scored "2" — "womb", "caves", "vase", "cocoon", "house", scored "1", "volcano", "rocket", "plane", "vagina".
2. "Joined Together": Scored "2" — "lambs . . . like they're stuck together", "Siamese twins", "(animal) head . . . seem like two and they're joined together here". Scored "1" — "elephant trunks — they're tied up and they can't get away", "some sort of cancer — malignant growth . . . looks like they're all attached and they have to be cut".
3. "Water": Scored "2" — "fish swimming", "seaweed . . . growing in the water", "tropical fish", "a river". Scored "1" — "beaver", "alligator", "octupuses . . . fighting", "turtle face".
4. "Miscellaneous": Scored "2" — "looks like darkness — looks very deep to me — like a very black cloud . . . like I was very high and deep", "white part looks like an egg inside . . . it's buried somewhere". Scored "1" — "a very fat person" (possible reference to pregnancy), "toads . . . feeding at the tree" (a possible reference to parasitic activity), "a moth or butterfly . . . absorbing sunlight" (references to sun and fire were thought to be possible references to the warmth of the intrauterine state.)

Category II included responses that involved other highly regressive imagery but without symbolic reference to the intrauterine state. Unlike category I, the expectation of differences here was not based on any striking impression that the original 13 records made in this regard. Instead, we felt that, since we had this opportunity to evaluate the records of heroin users and those of carefully matched controls, it might be fruitful to compare them for indications of other highly regressed needs. Another reason for our undertaking this line of inquiry was that many clinical workers have reported that in various ways drug addicts are highly regressed. Responses in this category also fell into four subcategories: (1) responses with oral-receptive connotations; (2) responses involving humans or animals in passive states; (3) responses involving physical contact between humans or animals; (4) miscellaneous responses that were thought to have aspects that were highly regressive which could not be scored in any of the three aforementioned subcategories.

Responses were again scored "2" or "1" depending on how confident the scorer felt that the particular responses had a particular meaning. Examples for the four subcategories under Category II follow:

1. "Oral-Receptive": Scored "2" — "fried eggs", "dogs . . . nursing their mother's breast", "a stomach". Scored "1"—"crab", "woman's breast", "a fat lady" (only scored "1" because it could instead have pregnancy implications).
2. "Passivity": Scored "2" — "crocodile . . . resting", "seals . . . sitting down", "butterfly . . . relaxing". Scored "1" — "body of a pig . . . as if turned over and feet were reaching up in air", "spiders . . . like clinging on to something", "persons going to sit down".
3. "Physical Contact": Scored "2" — "two dogs kissing", "two bears, it looks like they're rubbing noses", "two figures dancing . . . hands holding together". Scored "1" — "two people dragging another person", "two old men . . . back to back", "two kinds of animals — they're close together".
4. "Miscellaneous": Scored "2" — "babies", "caterpillars", "my birthstone", and "a

woman giving birth". Scored "1" — "a bird . . . nothing existing — maybe something a million years ago", "prehistoric birds", "dinosaurs" (these and other responses involving prehistoric animals were thought of as possibly referring to preverbal feelings or impressions), "animals with their heads out of the ground yelling" and "a bee coming out of a hole" (the last two examples were thought to be possible references to the birth process).

The two main categories and the eight subcategories were not designed to be mutually exclusive. Many responses fell into two or more subcategories even within the same main category.

After scoring the responses of a particular record, the "blind" evaluator made an overall judgment as to whether she felt that the particular record was that of a heroin user or a control. She used as her criterion her global impression of the Rorschach. This impression, in large measure was based on the presence of intrauterine responses (Category I) since it was the large number of these that seemed to uniquely characterize the records of the 13 heroin users in the pilot study.

In making overall judgments each record was classified in one of four ways: (1) heroin user, (2) control, (3) don't know, but a forced choice would be heroin user, (4) don't know, but a forced choice would be control.

Three hypotheses are thus being tested in this study: Hypothesis I: The heroin user group will produce significantly more responses of the kind described as having intrauterine implications than will the control group. Hypothesis II: The heroin user group will produce significantly more responses of the kind described as having highly regressive implications of other sorts than will the control group. Hypothesis III: When heroin user and control records are evaluated globally, they can be distinguished from each other to a degree greater than that expected on the basis of chance.

*Results:*

Since the difference between the average number of responses for the heroin user and control groups (27.9 and 26.4 respectively) does not even approach significance, the absolute number of responses falling into the various categories can be compared for the two groups.

The results bearing upon Hypothesis I are reported in Table II. The difference between the means for the two groups for Category I as a whole is significant at the .02 level (one-tailed test). When each of the four subcategories is considered separately, for subcategory 2 the means are the same, while for the other three subcategories, differences are in the predicted direction. However, only for subcategory 3, which has by far the greatest number of responses, does the *t* value reach significance.

The results bearing upon Hypothesis II are presented in Table III. The total scores and the subcategory scores are all in the predicted direction, but the differences are not significant. However, the difference in the total score yields a *t* that would be significant at the .10 level. Thus, the the data indicate a *tendency* in the direction predicted by Hypothesis II[3].

It should also be mentioned that an attempt was made to isolate those responses from subcategory I (oral-re-

[3] We believe that our use of non-heroin using *delinquents* as controls was responsible for Hypothesis II being only very weakly supported by our results. The great majority of our controls would be classified as "acting out" personalities or as impulse neurotics. These groups have been frequently described in the literature as orally fixated and as possessing other primitive characteristics. Thus, the heroin users may have given an unusually large number of responses in Category II, but because the control group was in many ways similar to them, they too, gave an unusually large number of these responses. If our premise is correct, an examination of the Rorschach records of control subjects who are *not* delinquent should reveal a significantly fewer number of Category II responses than were given by either the experimental or the control group used here.

TABLE II—Mean Scores for Heroin Users and Controls for Category I (Intrauterine Responses)

| | "Enclosures" Subcategory | "Joined Together" Subcategory | "Water" Subcategory | Miscellaneous Subcategory | Total Category I |
|---|---|---|---|---|---|
| Heroin Users | 1.9 | .4 | 4.6 | .8 | 7.7 |
| Controls | 1.3 | .4 | 2.6 | .6 | 4.8 |
| Difference | .6 | 0 | 2.0 | .2 | 2.9 |
| *t* | 1.06 | less than 1 | 2.03** | less than 1 | 2.21* |

* Significant at .02 level
** Significant at .025 level

TABLE III—Mean Scores for Heroin Users and Controls for Category II (Other Highly Regressive Responses)

| | "Oral-Receptive" Subcategory | "Passivity" Subcategory | "Physical Contact" Subcategory | Miscellaneous Subcategory | Total Category II |
|---|---|---|---|---|---|
| Heroin Users | 3.9 | 1.3 | 1.3 | 1.4 | 8.0 |
| Controls | 3.4 | .9 | 1.2 | .9 | 6.4 |
| Difference | .5 | .5 | .1 | .5 | 2.4 |
| *t* | less than 1 | less than 1 | less than 1 | less than 1 | 1.36* |

* $p < .10$

TABLE IV—Global Predictions of Heroin Users and Controls

| *Actual Status* | *Predicted Status* | | | | | |
|---|---|---|---|---|---|---|
| | "Heroin User" | "Don't know but forced choice would be heroin user" | Total Heroin User | "Control" | "Don't know but forced choice would be control" | Total Control |
| Heroin Users | 12 | 8 | 20 | 6 | 4 | 10 |
| Controls | 2 | 6 | 8 | 13 | 9 | 22 |

ceptive) that were thought to refer to the nursing process. References to breasts, lips, milk, or milk products, nursing, drinking, and milk-giving animals were included. However, here too there was no significant difference between the two groups.

The results bearing upon Hypothesis III are reported in Table IV. When all the judgments are considered, 42 of them were correct and 18 incorrect. Twenty heroin users and 22 controls were labeled correctly and eight heroin users and ten controls were labeled incorrectly. Thus, there was 70% correct labeling compared to the 50% which would be expected on the basis of chance. These results produce a chi-square which is significant at the .01 level.

When the "don't know but forced choice" judgments are excluded, 33 cases remain in which the evaluator felt reasonably sure of her predictions. She was correct in 25 or 76% of these. Twelve heroin users and 13 controls were labeled correctly and two heroin users and six controls were labeled incorrectly. This time, Fisher's exact probability test was applied and the results were significant at the .005 level. Thus, Hypothesis III is strongly supported by the findings of this study[4].

[4] A possible methodological flaw in this study should be noted. Because of the occasional lack of clarity in the handwritten records, the author who did the testing (LHS) was present when the other author evaluated the Rorschach records. It is possible that unwittingly DKS was cued as to which records came from heroin users and which from controls. We strongly doubt that this had any appreciable effect on the results. For, not only did the somewhat subjectively made global judgments discriminate between the two groups, but the more objectively scored Category I responses similarly

A *post hoc* reevaluation of the scoring categories was undertaken, in the hope of sharpening the categories for future research. It was discovered that had scores been assigned more conservatively, the differences between the two groups for some of the categories would have been substantially greater. In the "water" subcategory, had only the two-point responses been considered (i.e. where there was great confidence in the meaning of the response) heroin users would have had a mean score of 3.1 and the controls of 1.4. This would have increased the *t* value from 2.03 to 2.2, the latter figure being significant at about the .015 level while the former was significant at the .025 level. For the "enclosures" subcategory, we discovered that it would have been more fruitful to omit scores for such responses as jet, rocket, coal mine, vagina, castle peak, antique vase, and volcano. Upon reevaluation, these responses seemed to us to have other implications that were probably stronger than that for enclosure. If this had been done and only responses with more certain enclosure implications had been included (caves, houses, shell animals, valleys, flower pots, boats, animals in holes, bushes, or boxes, cocoons, and nests), the mean score for the heroin users would have been 1.6 compared to a mean score of .7 for the controls. This would have raised the *t* value from 1.06 to 2.6. The former figure was not significant, while the latter is significant at the .015 level.

Other *post hoc* observations were noteworthy: (1) Under category I, five direct references were made to an intrauterine state (four of "womb" and one of "embryo") and all by members of the heroin-user group. (2) In the "physical contact" subcategory responses of "animals kissing" or "rubbing noses" were given ten times and in all but one instance, they were given by the heroin users. (3) In the "miscellaneous" subcategory under Category II one subject perceived " a woman giving birth" and seven others gave responses that seemed to denote the birth process symbolically. Six of these eight subjects were heroin users. Also five subjects gave "caterpillar" responses and all of these were heroin users.

The figures quoted in the last two paragraphs cannot be taken as supporting any of the hypotheses, since the modifications in the scoring categories were made *after* the results were in. Cross-validation on new groups of heroin users and controls would be needed before it could be stated how valuable the new criteria would be.

*Discussion:*

The observations made as a result of perusing the Rorschach records of the original group of 13 heroin users has been borne out in this study of 30 additional heroin users and 30 controls. The heroin users gave significantly more Rorschach responses involving imagery that symbolically refer to properties of the intrauterine state and which therefore can be taken as reflecting the presence of noteworthy unconscious womb fantasies.

Before any conclusions are to be drawn, the cases that did not conform to expectation shall first be discussed. Since we believe that global judgments allow for the most effective use of the Rorschach, it is the result of these that we shall concern ourselves with here. In these judgments, eight controls were incorrectly classified as addicts and ten addicts were incorrectly classified as controls. The presence of responses suggesting womb fantasies in the eight controls is not surprising. For in addition to the obvious consideration of the fallibility of any clinician evaluating a Rorschach, two other factors could have been anticipated as leading to these erroneous predictions. The first is that when Rorschach content is analyzed in terms of a theme, a one to

differentiated. However, ideally the methodology should be planned so that this possible source of bias be eliminated.

one correspondence between that theme and a particular pathological condition is not to be expected. In the case of drug addicts, we are only suggesting that the presence of womb fantasies is *one* aspect of their psychology. No doubt much more is involved. Rado (1926, 1933), Glover (1933), and Szasz (1958) have reported on other essential elements in their makeup. Womb fantasies in other constellations can lead to other kinds of pathology and claustrophobics (Lewin 1935) and asthmatics (Alexander 1941), in particular, have been described as having these kinds of fantasies. It is certainly possible that at least some of the eight controls incorrectly identified, did have noteworthy womb fantasies, but did not possess the other personality elements that are necessary in making one a heroin user.

Second, it is possible that some of the responses designated as having intrauterine implications had a different meaning to the patient giving them. Unlike the interpretation of symbols in dreams, the patient's own associations to his productions are usually not elicited in Rorschach testing (except for what may emerge during the formal Rorschach inquiry) and no deliberate attempt was made to elicit associations in our study. In order to avoid making "wild" interpretations the common denominator in sets of unusual responses is therefore sought. However, some records do not allow for an effective utilization of the "common denominator" principle since too few atypical responses are given and it is particularly with these that the mislabeling of a theme can occur.

While the occurrence of some records resembling those of heroin users among the controls could thus have been logically anticipated without contradicting the idea that womb fantasies are essential to the psychology of the heroin user, the mislabeling of ten heroin users as controls could not. Is it necessary to account for this sizable number of erroneous predictions by raising the issues of the fallibility of the Rorschach test or the particular clinician who evaluated these records, or by modifying the idea that womb fantasies are *always* present in heroin users. We think not. For further analysis of the results reveals two highly interesting and crucial findings. First, among the 30 heroin users, ten of them had been using the drug for a relatively short period of time (from 2 months to 8.5 months, with a mean of 5.4 months.) The other 20 had been using drugs for a much longer period of time (from one to 6 years with a mean of 2.8 years). *Six* of the ten heroin users who were mislabeled as controls came from the first group. Second, five of the subjects from the heroin user group had been "off" drugs for a very lengthy period of time when they were given the Rorschach (from 1.5 to 5.5 years with a mean of 2.5 years). Not one of the other 25 was off drugs for more than 8.5 months at the time he was tested. The mean amount of time that the latter group had refrained from taking the drug was 2.2 months. The difference between these two groups was even more striking in light of the fact that nine heroin users in the second group reported that they had tried unsuccessfully to wean themselves of the heroin. Eight of the nine could not withdraw from the drug for more than six months. The ninth was able to withdraw for one year but he then returned to heroin by the time he was tested. Of the five heroin users in the first group who were able to abandon the drug for at least a year and a half *three* were mislabeled as controls. Thus, of the ten heroin users who were mislabeled as controls, nine of them had either been taking drugs for a brief period of time or had been "off" drugs for a very lengthy period of time. Conversely, there were sixteen subjects in the heroin-user group who had been both "on" drugs for a lengthy period of time and who even when they tried, could not give up the drug for more than a brief

period of time and fifteen of these were correctly classified as heroin users. From this point on we shall refer to these 16 as heroin *addicts* to differentiate them from the other 14 heroin users[5].

The fact that 15 of the 16 heroin *addicts* were correctly identified while nine of the 14 "short term" or "successfully withdrawing" heroin users were misidentified, needs interpretation. We believe it to mean that the first group, the heroin *addicts,* are characterized by a greater prevelance of, or potential for womb fantasies before they ever begin taking drugs and this is one of the factors that makes withdrawal so difficult. We reason that the three mislabeled heroin users who were "off" drugs for at least a year and a half were able to give up the drug "habit" for the very reason that the womb fantasies and the impulses that these served were not strong in them in the first place. For this same reason we would further postulate that at least some of the six mislabeled "short term" heroin users would soon withdraw from the drug and remain "off" for a relatively lengthy period of time.

However, it could also be argued, that the prevelance of much more notable womb fantasies among the heroin *addicts* was a *result* of their extensive use of drugs, i.e. a function of the physiological effects of the drug. According to this agrument these effects would not be present if heroin had only been used for a brief period of time or if heroin had been abandoned for a lengthy period of time. A crucial step that could be taken to decide this issue would be to retest those "short term" heroin users who continue using heroin for a much longer period to determine if prolonged drug use appreciably increases the number of Rorschach responses with intrauterine implications. Until this step is taken, our explanation as to what is cause and what is effect admittedly rests on shaky grounds.

An assumption of this study has been that the particular kind of Rorschach content we have dealt with here has intrauterine implications. However, since it was only for the "water" subcategory of the four defined under Category I, that a significant difference was found, the question of whether this assumption is justified can be raised. The justification for the existence of this relationship receives support from Alexander's statement (1941, p. 62) describing womb fantasies in asthmatics that "the universality of the significance of water (ocean, lake, bathtub, etc.) as a womb symbol belongs to the best established findings of psychoanalysis". We should also like to point out that the direct non-symbolic references to the intrauterine state were given *only* by heroin users. Furthermore, when the "enclosures" subcategory (which seems to us less ambiguous in terms of its referent) was redefined more conservatively, the difference between the two groups became significant. However, in the absence of confirmatory associations to their Rorschach productions by the subjects, we feel that our interpretation of these responses is not a closed issue.

We have been unable to find in the literature mention made by other investigators of intrauterine fantasies in heroin users. The few projective test

[5] The one mislabeled heroin *addict* in this group of 16 also deserves comment. He was the only one in the entire group of 30 heroin users who was under the influence of heroin at the time he was tested, having taken a "shot" shortly before he came to the office where the Rorschach was administered. One possible explanation for the absence of noteworthy womb fantasy responses in his Rorschach is that the physiological state that heroin induced was experienced as womb-like and thus the need for nurturing womb fantasies may have been temporarily abandoned. A second possibility is that womb fantasies are not abandoned and perhaps even stimulated by the physiological state resulting from heroin usage and are actively discharged in conscious semi-disguised fantasy. Thus, this subject may have released these fantasies before taking the test, thereby greatly minimizing their expression in his Rorchach imagery.

studies described earlier did not deal with content themes, particularly at the dynamic level that we attempted here. Most of the non-analytic psychiatric investigations of drug addicts also dealt with surface personality variables and attempts were not made to assess the patient's unconscious fantasy life. It is interesting, however, that Zimmering *et al* (1951) reported that the 12 addicts who they interviewed preferred to sit quietly in a dark room with soft music playing on the radio after they had injected themselves with heroin and that one boy preferred to take his "shot" while lying in a bathtub filled with warm water. In another study by the same authors (Zimmering *et al*, 1952), this time, of 23 heroin addicts, it was reported that all the addicts described their feelings under heroin as "a disappearance of anxiety and a feeling of euphoria with a sense of buoyancy and floating". It seems reasonable to infer from the findings of both these studies that the addicts were trying further to simulate the intrauterine environment.

There is considerably less psychoanalytic literature on drug addiction than on many other psychopathological conditions since most addicts are considered very poor candidates for psychoanalysis. We were unable to find any psychoanalytic publication that specifically mentions the presence of intrauterine fantasies in drug addicts. (Mannheim, 1955) in a case study report of one addict seems to imply this, though she does not deal with this phenomenon in more than a cursory way. In describing her patient, she remarks, "what she really wanted was the deepest longing of the addict, to be the child, suckled, petted and engulfed in the mother . . . Her dreams entailed the oceanic longing for sheltered existence and oral satiation". However, we discussed our findings with Dr. Robert Savitt, one of the very few psychoanalysts who has had even moderately extensive and intensive experience with drug patients. He indicated that our results having to do with the prevalence of womb fantasies in this kind of patient were consistent with his findings from treating individual addicts.

We should like to make it clear that neither we, nor Savitt, posit the existence of memory traces to account for the presence of womb fantasies. In terms of our present knowledge it would seem much more sensible to see these fantasies as based in ideational constructions that the growing child makes of what intrauterine life is like, as a result of what he factually learns and, even more important, of what he imagines it to be.

What meaning do these intrauterine fantasies have for the heroin user? The results of our research cannot answer this question, but simply point to the existence of such fantasies. However, to put our findings in a theoretical context, two possible meanings that such fantasies could have shall be discussed.

One possibility is that Lewin's formulation (1950, p. 108) about the womb fantasy being a disguised breast fantasy for the claustrophobic, also applies to the heroin addict. In discussing claustrophobia he writes, "The intrauterine fantasy in which the child identifies itself with a nursling, is taken into the abdomen and in that location continues its feeding or comes to rest in a sound sleep, is a nursing fantasy with a shift downward from breast to abdomen".

An alternate idea has been advanced by Savitt in an unpublished paper presented at the 1958 mid-winter meetings of the American Psychoanalytic Association. Based on the analyses and partial analyses of four heroin addicts, Savitt questions if his patients' wishes for an intrauterine existence are primarily a screen for the wish to be in the mother's arms and at the breast. He wonders instead, if it is not certain specific aspects of intrauterine existence that appeals to the heroin addict, aspects that do not characterize the infant's relationship

with the mother at the breast. "Attempts at mastery through oral incorporation are not sufficient, effective, or rapid enough (for the heroin addict) . . . He resorts, therefore, to a more archaic but more rapid form of passive receptivity which bypasses the oral route, namely the intravenous channel, which for purposes of nutritional intake may be considered the later day equivalent of the umbilical cord". In elaborating upon this he states that for the heroin addict, only the intrauterine state as he fantasies it will satisfy "the need for the irresistible immediacy of relief from nonpleasure. The oral route is too slow". In addition, it is only in the fantasied intrauterine state that he can receive nourishment automatically and on demand. This Savitt believes may be of particular importance due to inadequate early mothering received by addicts. Based on his case material he hypothesizes that for heroin addicts the "flow of milk and the caress of mothering was interrupted too soon. The addict never had enough of maternal milk and of mothering because he was weaned abruptly or suffered what amounted to an early psychological abandonment by his mother . . . Because of this insufficient mothering, he needs to revert to a level analogous to that at which mothering (i.e. complete nourishment and security) occurred in utero independent of the mother's psychological state or wishes. This regression, so to speak, is created for a moment, at the instant the addict injects the heroin intravenously".

It should be noted that the idea that intrauterine fantasies occur to a noteworthy degree in heroin addicts was arrived at independently by Savitt and by us, as a result of two different methods of investigation. It was only after we made this discovery, that we compared notes. This strengthens the likelihood that this finding is a valid one. Still, confirmation by other projective technique studies and by other psychoanalytic investigations will be needed before this finding can be taken as a hard fact.

## Summary

This study was undertaken to investigate the frequency of certain kinds of imagery in the Rorschach records of heroin users. This imagery appeared with seeming frequency in a group of 13 heroin users tested earlier. The subjects for the study proper were 30 young adult heroin users and 30 controls. The controls were persons who were non-drug users despite the fact that heroin was readily accessible to them. They were very similar to the heroin users in age, race, education, diagnosis, and in being apprehended for criminal acts. The Rorschachs were administered by one investigator and were scored "blind" by the second investigator for two content categories. Category I included responses involving imagery that was felt to symbolically refer to properties of the intrauterine state, therefore, reflecting the presence of unconscious womb fantasies. Category II included responses that involved other highly regressive imagery but without symbolic reference to the intrauterine state. The "blind" evaluator also made a global judgment as to whether she felt that the particular record was that of a heroin user or a control. She used as her criterion her global impression of the Rorschach primarily based on a flexible evaluation of the intrauterine responses.

A summary of the results follows: (1) The heroin users produced a significantly greater number of responses with intrauterine implications than the controls. (2) There was no significant difference between the two groups for the number of responses that involved other highly regressive imagery, although there was a tendency in the predicted direction. (3) The "blind" evaluator was correct in predicting from which group each subject came in 70% of the cases, a number significantly greater than

would be expected by chance. Moreover, of the 16 heroin users who had used the drug for a lengthy period of time and were not able to withdraw even when they tried, 15 of these were categorized correctly.

These findings were discussed and an attempt was made to place them in a theoretical context.

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# An Approach to the Study of the Stimulus Significance of the Rorschach Ink Blots[1]

J. O. Sines
Washington University School of Medicine

There is the tendency among clinicians to regard Rorschach cards IV and VII as having specific symbolic significance as father and mother figures and several rather different experimental approaches have yielded data which have tended to support such hypotheses (Meer and Singer, 1950; Rosen, 1951; and Hirschstein and Rabin, 1955). Charen (1957), on the other hand, has argued against such practice on the basis of highly convincing clinical data.

If cards IV and VII do in fact possess such specific symbolic significance they must be considered to have connotative meanings which are similar to the connotative meanings attached to the concept of "father" and "mother". One technique which is claimed to measure connotative meaning is the semantic differential as presented by Osgood and others (Osgood, 1952; Osgood, Suci and Tannenbaum, 1958).

The study reported here was an attempt to evaluate the stimulus value of each Rorschach card by the indirect means of determining the similarity between the connotative meaning of each card and the connotative meaning of a number of concepts, among which were "father" and "mother".

## Method

### *Subjects and Procedure*

Twenty undergraduate students (16 males and 4 females) ranging in age from 19 to 36 years, who were enrolled in an introductory Psychology course served as subjects. Each subject was provided with 30 sheets of paper, on each of which was a form of semantic differential consisting of sixteen 7 point scales. At the extremes of each scale were adjectives which were essentially antonyms (see Table I). At the top of each sheet was a notation indicating what was to be rated on each particular set of 16 scales. After being given two practice scales, S's were instructed to turn to the first sheet at the top of which was the notation "Card I". Card I of the Rorschach was then projected onto a screen at the front of the classroom and S's were instructed to rate the inkblot on all of the sixteen 7 point scales. When all S's had completed the rating they were told to turn to the next page where they were to rate "Card II" which was then projected onto the screen. Each Rorschach card was rated in this manner.

Table I. Scales Used in the Semantic Differential

| | |
|---|---|
| Good . . . . . Bad | Large . . . . . Small |
| Strong . . . . Weak | Active . . . . . Passive |
| Soft . . . . . Hard | Happy . . . . . Sad |
| Friendly . Hostile | Beautiful . . . . . Ugly |
| Warm . . . . . Cold | Frightening . Reassuring |
| Light . . . . Heavy | Young . . . . . Old |
| Bright . . . . Dark | Kind . . . . . Cruel |
| Fast . . . . . Slow | Dominant . Submissive |

When all 10 cards had been rated S's were instructed to proceed to the following pages and rate the concept which was printed at the top of each sheet. S's were allowed to work at their own speed from this point on. A general discussion of the purpose of the study followed the completion of all ratings. All 20 of the concepts used were Rorschach responses including most of the responses classified as populars (see Table II).

The similarity of the "meaning" attributed to a given card was com-

[1] This study was supported in part by a grant from the institute for Medical Education and Research of St. Louis.

TABLE II. Concepts Rated in This Study

| | |
|---|---|
| Animal Hide | Fire |
| Ape | Halloween Mask |
| Bat | Iceberg |
| Blood | Man |
| Butterfly | Monster |
| Clouds | Mother |
| Dancing | People |
| Explosion | Penis |
| Father | Witch |
| Fighting | Woman |

pared to the "meaning" attributed to each concept by means of the generalized distance formula $D = \sqrt{\Sigma d^2}$, devised by Osgood (1952). In this case "*d* is the difference in allocation of the two concepts on a single scale" (Osgood and Luria, 1954). Using this method a small value of D is associated with greater similarity and a large D value with less similarity of ratings or connotative meaning.

## RESULTS

The five concepts with the lowest median D values (greatest similarity) and the 5 concepts with the greatest D values (lowest similarity) in relation to each Rorschach card are presented in Table III. Specifically, these data do not support the hypotheses that cards IV and VII have highly significant value as father and mother symbols respectively.

The concepts used in this study whose connotative meanings were most similar to the connotative meaning attributed to Card IV are generally negative, "frightening" and unpleasant. This raises the possibility that contrary to the usual clinical practice of inferring attitudes toward the father or other authority figures from a subject's response to card IV, the subject's response to the appearance of the "father" in this card may indicate strong negative attitudes toward the father or father surrogate.

The data obtained in this study are rather more validating with regard to the hypothesized significance of card VII. In this case those concepts whose connotative meanings are most

TABLE III. Five Concepts with Connotative Meaning Most and Least Similar to Connotative Meaning Assigned to Rorschach Card. (Number 1 is most and Number 20 is least similar)

| | I | II | III | IV | V | VI | VII | VIII | IX | X |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Ape | People | Penis | Monster | Bat | Witch | People | People | People | People |
| 2 | Bat | Penis | People | Ape | People | Ape | Woman | Bat | Mask | Mask |
| 3 | Witch | Mask | Man | Fighting | Woman | Hide | Mask | Man | Man | Man |
| 4 | Mask | Hide | Blood | Witch | Penis | Iceberg | Hide | Penis | Penis | Bat |
| 5 | Fighting | Man | Hide | Iceberg | Mask | Mask | Dancing | Mask | Blood | Clouds |
| 16 | Father | Fighting | Explosion | Father | Dancing | Father | Ape | Clouds | Bat | Mother |
| 17 | Mother | Explosion | Butterfly | Mother | Clouds | Mother | Explosion | Dancing | Fighting | Woman |
| 18 | Woman | Witch | Witch | Dancing | Explosion | Dancing | Witch | Iceberg | Witch | Dancing |
| 19 | Dancing | Iceberg | Iceberg | Woman | Monster | Woman | Iceberg | Woman | Iceberg | Iceberg |
| 20 | Butterfly | Monster | Monster | Butterfly | Iceberg | Butterfly | Monster | Monster | Monster | Monster |

similar to the meaning attributed to card VII are in fact predominantly human and female or feminine. These findings are entirely consistent with the tendency to infer attitudes toward women and females in general from the responses obtained on this card.

In general, these data derive added validity from the clustering of the populars among those concepts with meaning most similar to the connotative meaning attributed to the various cards. Thus, those "P" responses which are W, W or D without exception appear among the "most similar" concepts. Such responses are: Card I—Bat; Card II—People; Card III—People; Card V—Bat; Card VI—Animal Hide; and Card VII—Woman. It appears, therefore, that the semantic differential and the Rorschach may *in part* be tapping a similar level of attitudes and perceptual tendencies.

Other aspects of the data in this study require one to say the semantic differential and Rorschach tap similar levels of personality attributes only "in part". The most striking example of the differences involved is seen in the list of concepts rated in a similar fashion to the ratings given cards III and VI. The concept "Penis" does not appear to have "meaning" highly similar to the connotations of Card VI while it's "meaning" is most like the "meaning" assigned to Card III.

This discrepancy may be attributable to any of several factors among which are the probable difference between the effects on perception of group and individual administration, and the possible influence of conscious control factors in the individual face to face situation.

## Discussion

Due to the size of the sample, the nature of the subjects and the manner of presenting the Rorschach cards several important questions can of course be raised. Whether or not the results presented here can be replicated with a larger, more representative sample or with neurotic or psychotic subjects is, however, an empirical question. Individual presentation of the cards themselves instead of group viewing on a screen may also result in different findings to some extent.

There remain, however, at least three important points. First, the method employed seems to offer a valuable approach to the analysis of the stimulus value of the Rorschach inkblots. Second, within the limits of sample size and method of administration, the results support in part the assumption made regarding the symbolic significance of Card VII and third, they corroborate the classification of certain responses as "Popular".

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# Effects of a Variation in Instructions on Responses to TAT Cards[1]

NORMAN SOLKOFF
State University of Iowa[2]

It is assumed that responding in the third person to the Thematic Apperception Test (TAT) produces fewer avoidance responses in *S* than if he were responding with similar content directly about himself. In support of this notion, Tomkins (1948) observed informally that Ss instructed to respond in the first person, i.e., as if *S* were the person in the picture, either refused to comply with instructions at all, or when they did comply, produced impoverished stories.

In the present study, an attempt was made to put Tomkins' observation to experimental test. It was assumed that, as compared with third person instructions the increased avoidance associated with first person instructions would be reflected in longer initial reaction times, longer total narration times, an increased number of pauses exceeding a ten second limit, and a reduction in total number of words.

## METHOD

### *Subjects*

Two separate samples of male *S*s were studied. One group was composed of 30 summer session students from an introductory course in psychology at the State University of Iowa. The mean age of this group was 24.3 years (SD 2.5). The mean educational level was 13.8 years (SD 1.1).

The other group was composed of 30 psychiatric patients hospitalized at the Veteran's Administration Hospital in Iowa City. No patients who were beyond 55 years of age, or who were suspected of neurological disorders were used. The mean age of this group was 33.7 years (SD 7.7). The mean educational level was 10.2 years (SD 2.9).

Because of the significant differences in age and educational level between these two groups, no attempt was made to compare their results in a single statistical design.

### *Procedure:*

Six TAT cards were used: Cards 6GF, 2, 6BM, 7BM, 4, and 13 MF. Card 6GF, served as a sample card and was always presented first, followed by the remaining five cards presented in the above sequence. Statistical analyses were confined to the data for these five cards.

Each *S* was administered all cards twice, once under each of two instructional conditions. The standard instructions required *S* to respond in the third person, while the experimental instructions required *S* to respond in the first person, i.e., to tell the story as though it were happening to *S* himself. Half the *S*s were initially administered the six card series under the standard instructions and, after an interpolated period of 15 minutes, were readministered the six cards under the experimental instructions. The other *S*s were tested in the reverse order.

During the interpolated period, certain biographical information (age, education) was secured and the Information subtest of the Wechsler Adult Intelligence Scale was administered.

For the College sample *E* recorded *S*s stories by hand. For the patient

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[2] Now at the University of Wisconsin-Milwaukee.

sample, a microphone, in clear view of S, was used and the stories were tape recorded.

## Results

*Statistical Analysis of the Data*

Separate Lindquist Type II analyses of variance (Lindquist, 1953) were computed for each of the four criterion measures for each group. Each criterion score for an individual *S* was computed by summing scores of the entire series of five TAT cards taken as a unit.

*Student Sample:*

In Table I, the main effect of the instructions was significant for all criterion measures except initial reaction time.

Table I—Means of Criterion Measures Summed for Five TAT Cards and F Values for First and Third Person Instructions (Students)

| Criterion | First Person | Third Person | F |
|---|---|---|---|
| Initial Reaction Time in Seconds | 121.46 | 87.43 | 3.92 |
| Total Time in Seconds | 937.93 | 766.10 | 9.90** |
| Total Number of Words | 623.23 | 528.10 | 11.29** |
| Total Number of Pauses | 2.66 | 1.76 | 4.84* |

*p <.05
**p <.01

In Table II, the main effect of order was significant for all criterion measures except total number of pauses.

As regards this latter measure, a significant instructions-by-order interaction resulted.

Patient Sample:

The results of the analyses of variance for the psychiatric sample are presented in Tables III and IV.

In Table III, the main effect of instructions was significant for only one criterion measures initial reaction time.

Table II—Means of Criterion Measures Summed for Five TAT Cards and F Values for First and Second Administrations (order) of the 5 TAT Cards (Students)

| Criterion | First Administration | Second Administration | F |
|---|---|---|---|
| Initial Reaction Time in Seconds | 125.77 | 84.14 | 5.58* |
| Total Time in Seconds | 774.97 | 929.07 | 7.76** |
| Total Number of Words | 529.76 | 630.57 | 10.58** |
| Total number of Pauses | 2.03 | 2.40 | .80 |

* p <.05
** p <.01

Table III—Means of Criterion Measures Summed for Five TAT Cards and F Values for First and Third Person Instructions (Patients)

| Criterion | First Person | Third Person | F |
|---|---|---|---|
| Initial Reaction Time in Seconds | 99.43 | 68.50 | 13.35** |
| Total Time in Seconds | 391.43 | 397.36 | .18 |
| Total Number of Words | 271.60 | 281.16 | .32 |
| Total Number of Pauses | 3.90 | 3.43 | 2.14 |

* p <.05
** p <.01

Table IV—Means of Criterion Measures Summed for Five TAT Cards and F Values for First and Second Administrations of the 5 TAT Cards (Patients)

| Criterion | First Administration | Second Administration | F |
|---|---|---|---|
| Initial Reaction Time in Seconds | 92.03 | 74.20 | 5.01* |
| Total Time in Seconds | 425.40 | 343.40 | 6.25* |
| Total Number of Words | 276.27 | 289.27 | .0002 |
| Total Number of Pauses | 4.80 | 2.53 | 22.31* |

* p <.05
** p <.01

Table IV reveals that the main effect of order was significant for all

criterion measures except total number of words.

There were no significant instructions-by-order interactions.

## DISCUSSION

### *Treatment Effects*

Significantly longer total times to tell TAT stories, and a significantly greater number of pauses occurred when student *Ss* were required to respond to the TAT cards under first person instructions. Although not significant the mean initial reaction time for the student sample was nearly half again as long under first person as compared with third person instructions.

Contrary to expectation, the total number of words comprising the student *Ss* stories was significantly greater when the stories were told in the first person. It may be argued that first person instructions result in a heightened drive state as well as in the interfering tendencies suggested by the results for the other criterion measures. It is conceivable that this heightened drive state could result in greater productivity. It is also possible, and worthy of further study, that verbal output under first person instructions might be largely composed of relatively superficial verbalizations offered by the student *Ss* in their attempts to obey instructions and yet preclude personal content.

Significant treatment effects with respect to only one of the criterion variables, initial reaction time, was found for the patient group. The absence of any other significant treatment effects might be a function of the impoverished level of the stories produced by the patients under both instructional conditions making it difficult to detect differences in the criterion measures.

A second hypothesis is that the patient group was inhibited with respect to the total task situation. This hypothesis is compatible with *E*'s observation of a much greater degree of resistance and suspiciousness encountered with patient *Ss* as compared with the student *Ss*. Perhaps contributing to their resistiveness was the presence and use of a tape recorder and microphone, which were not employed with the student sample.

### *Order Effects:*

From first to second administration of the TAT cards, there resulted a significant decrease in reaction time for both the student and patient samples. This result could be a function of the effects of practice derived from telling a story the first time.

Increases in total time spent on the stories and total number of words comprising the stories from first to second administration for the student *Ss*, may have also resulted from practice with the test stimuli. A second possibility is that the student *Ss* felt they were expected to do better when they were requested to tell stories a second time, and hence productivity became more voluminous.

No change in total number of words from first to second administration of TAT cards was found for the patient sample, but significant decrements did occur in total time and total number of pauses. It is plausible that the decreased total time to tell stories of the same length resulted from a desire on the part of the patient *Ss* to terminate the test situation as quickly as possible. This would be compatible with the inference of greater inhibition to the total task situation on the part of the patient *Ss*.

The present experiment might be repeated either with the addition of special situational conditions designed to produce greater relaxation and more motivation to perform well or with prior selection of relatively cooperative patients. Another approach might be to use drugs, such as sodium amytal (Masserman, 1943), in an effort to reduce inhibition. It would be predicted that under such conditions, the criterion scores for the patients

would more closely approximate those of the student *S*s.


## Summary

The purpose of this study was to investigate the effects of a variation in instructions on *S*'s responses to TAT cards. Two samples of *S*s were used: a group of 30 college students, and a group of 30 hospitalized psychiatric patients.

Each *S* was administered a series of five TAT cards twice; once under standard third person instructions and once under first person instructions. Four criterion variables were investigated: initial reaction time, total narration time, verbal productivity, and total number of pauses exceeding a 10 second limit.

For the student sample, the main effect of instructions was significant for all criterion measures except initial reaction time. In the patient sample, only one significant main effect was found; initial reaction time was longer under first person instructions.

As regards the order of administration of the TAT cards, there resulted a significant decrement in initial reaction time, but significant increases in total time and total number of words from first to second administration for the student *S*s. For the patient sample, the effect of order was to decrease initial reaction time, total time, and total number of pauses. Possible reasons for the increase in verbal productivity for the student sample under first person instructions as well as the absence of significant instructions effects for all criterion measures except initial reaction time for the patient sample were discussed, and specific research suggestions were offered.


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# Rorschach Card Rejection As A Correlate of Intelligence In Children

ALEXANDER TOLOR
Fairfield State Hospital
Newtown, Connecticut

HARVEY L. GLASS
Children's Services of Connecticut
Hartford, Connecticut

and

MATTHEW D. MERMELSTEIN
Hartley-Salmon Child Guidance Clinic, Hartford, Connecticut

In a recent study Tamkin (1959) tested the hypothesis that intellectual functioning is a determinant of Rorschach card rejection. Using a group of adult hospitalized neuro-psychiatric patients, he found that those patients rejecting one or more cards scored significantly lower on the Wechsler-Bellevue Intelligence Scale than those who did not reject any cards. Moreover, he demonstrated a trend toward an inverse relationship between intelligence and number of Rorschach cards rejected. The present study has as its purpose the testing of the generality of these findings by extending the method employed to groups of emotionally disturbed children.

## PROCEDURE

From the files of the Psychology Departments of three different institutions in the Hartford, Connecticut, area, offering services to emotionally disturbed children, 268 cases were randomly selected. The institutions participating were the Children's Clinic at the Institute of Living, the Hartley-Salmon Child Guidance Clinic, and Children's Services of Connecticut. The only criteria for inclusion in this study were that the child's psychological folder contained a formal evaluation of the child's intellectual functioning as measured by one of the standardized tests of intelligence, that a completely scored Rorschach protocol was available, and that the child fell within the age range of 4 years to 17 years, 11 months at the time of testing. Rejection was defined as failure to offer a scorable response during the initial administration of the inkblots. Although in a few instances the I.Q. was based on the Stanford-Binet Test or on one of the other Wechsler tests, in the vast majority (72%) of cases the Wechsler Intelligence Scale for Children had been used. The total sample included 179 males and 89 females. Their I.Q.s ranged from 53 to 137, the mean being 98.1.

## RESULTS

When children of all ages are combined, it is found that 70 or 26.1% of the total sample rejects one or more Rorschach cards. Table I presents the means and standard deviations in I.Q. for Ss rejecting at least one card and for those rejecting none of the cards. The comparison shows a slight trend for the group in which rejections were elicited to score lower in intelligence than for the group in which no rejections occurred, but the $t$ test of 1.68 indicates that the difference is not significant even at the .05 level. Since the groups differed significantly in variances, with the "no-reject" group having a greater vari-

TABLE I – A Comparison In Intelligence Between Children Rejecting One or More Rorschach Cards and Children Rejecting None.

| Groups | Intelligence Quotients | | $t$ |
|---|---|---|---|
| | Mean | S.D. | |
| Reject (N = 70) | 96.9 | 8.78 | |
| No-Rejects (N = 198) | 99.3 | 13.61 | 1.68* |

* Cochran and Cox modified $t$ at the .05 level is 1.97; at the .01 level is 2.62.

ance than the "reject" group, the Cochran and Cox (1950) modification of the *t* test was used.

When the overall group is separated into five different age groups as follows: (1) 4 years to 7 years, 11 months; (2) 8 years to 9 years, 11 months; (3) 10 years to 11 years, 11 months; (4) 12 years to 13 years, 11 months; and (5) 14 years to 17 years, 11 months, and chi square tests are performed within each sub-group to ascertain whether there is any significant association between falling below the group's mean in intelligence and the tendency to reject Rorschach cards, the results are essentially negative. Of the five comparisons made, only one, at age level 12 years to 13 years, 11 months, yields a significant chi square ($x^2=4.69$, $P<.05$).

In view of the fact that Tamkin (1959) also found that the mean I.Q.s of groups of adult patients tended to decrease with increasing amounts of rejection, a similar analysis was made for emotionally disturbed children. Table II discloses that there is no consistent pattern of association between the variable of number of cards rejected and the variable of intelligence. It should be noted further that none of the mean differences is statistically significant.

TABLE II – Intelligence of Children Rejecting Varying Number of Rorschach Cards

| Number of Cards Rejected | Number of Ss | Intelligence Mean | Intelligence S.D. |
|---|---|---|---|
| 0 | 198 | 99.3 | 13.61 |
| 1 | 35 | 99.5 | 15.17 |
| 2 | 20 | 95.1 | 16.05 |
| 3 or more | 15 | 100.5 | 13.58 |

A final comparison made relates to the differential rejection rates associated with the various cards. Cards IX, VI, and II are found to be the most frequently rejected inkblots whereas cards V, III, and I are least often rejected. Table III presents information concerning the frequencies and percentages of emotionally disturbed children rejecting each individual Rorschach card.

TABLE III—Frequencies and Percentages of 268 Emotionally Disturbed Children Rejecting Individual Rorschach Cards and Rank Order of Rate of Rejection

| Rorschach Card | No. of Rejections | Percent Rejections | Rank |
|---|---|---|---|
| I | 9 | 3.3 | 8 |
| II | 15 | 5.6 | 3 |
| III | 6 | 2.2 | 9 |
| IV | 12 | 4.5 | 6 |
| V | 2 | .7 | 10 |
| VI | 25 | 9.3 | 2 |
| VII | 14 | 5.2 | 4.5 |
| VIII | 11 | 4.1 | 7 |
| IX | 34 | 12.7 | 1 |
| X | 14 | 5.2 | 4.5 |

## DISCUSSION

The results of the present study indicate quite clearly that the hypothesis stating that Rorschach card rejection is determined by differences in intellectual functioning is an untenable one, at least when generalized to groups of emotionally disturbed children. The apparent inconsistency between the results obtained in this study and those of Tamkin (1959), with respect to the role played by intellectual factors in card rejection, can be easily reconciled not solely on the basis of differences in samples used, but also by reviewing Tamkin's statistical procedures. The barely significant difference which he obtained between rejectors and non-rejectors in intelligence is a function of his having used a one-tailed test, which in this instance is of questionable justification (See Kimmel, 1957). Furthermore, the data which were offered in support of the belief that groups of Ss rejecting increasing numbers of Rorschach cards also have a progressively decreasing intellectual capacity was not subjected to any tests of significance because of the small number of individuals in these groups. In the present study, however, when such tests of significance are applied, and

when the number of Ss in the different groups attains a more respectable size, not even a trend is in evidence.

When these findings on intellectual factors as not being significantly related to Rorschach card rejection are combined with the findings of several other studies (Mensh and Matarazzo, 1954; Sisson, Taulbee and Gaston, 1956) showing that card rejection has little or no diagnostic significance in terms of nosological classifications, and with a study (Tamkin, 1958) indicating that rejection is unrelated to various personality variables as measured by the MMPI, one is left with the uncomfortable but irrefutable conclusion that we do not currently know the specific variables which account for Rorschach card rejections.

Despite the fact that the meaning of rejections on the Rorschach remains largely a matter of conjecture, there is considerable empirical evidence available on the frequency of rejection and on the specific cards which are most susceptible to rejection. In general agreement with most previous studies (Mensh and Matarazzo, 1954; Sisson et al., 1956; Ames, Learned, Métraux, and Walker, 1952), but in disagreement with the 44% of rejection computed for Tamkin's (1959) Ss, is the 26% rejection rate obtained in our sample of children; also, in general agreement with former studies (Tamkin, 1958; Mensh and Matarazzo, 1954; Sisson et al., 1956) is the finding that cards IX and VI are among the most frequently rejected ones. Departing from the findings of the other investigators, however, is the high incidence of Card II rejection among our Ss, a finding which may distinguish children from adults. The relative agreement among studies reporting normative data appears to represent a promising foundation on which more penetrating insights can eventually be formulated.

## SUMMARY

The present study was designed to test the validity and generality of Tamkin's (1959) finding that Rorschach card rejection is a function of intelligence in adult patients. The authors of this investigation extended the methods previously employed to a group of 268 emotionally disturbed children, aged 4 years to 18 years, on whom complete Rorschach records and intellectual evaluations were available. For the group as a whole the data indicated that those Ss who rejected at least one Rorschach card did not differ significantly in intelligence from those Ss who did not reject any cards. When the overall sample was separated into five age-level groups, in only one instance is there a significant I.Q. difference between rejectors and non-rejectors. Moreover, there was no evidence of an inverse relationship between the number of cards rejected and the child's level of intellectual functioning. Therefore, the results failed to confirm the hypothesis that Rorschach card rejection is a correlate of intelligence in emotionally disturbed children. The discussion revolved around the differences in samples and in statistical procedures which could account for some of the differences in results obtained by Tamkin (1959). In addition, normative data on card rejection were presented and related to the findings of other investigators.

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# A Comparison of Two Methods of Analyzing Rorschach Data in Assessing Therapeutic Change[1]

HAROLD S. ZAMANSKY
Northeastern University
and
ALFRED E. GOLDMAN
Norristown State Hospital

Investigations of the effectiveness of various forms of psychotherapy have frequently employed pre- to posttherapy differences on the Rorschach test as a principal criterion of personality change. Typically, the experimenter has set up a list of specific signs or indices (e.g., M, FC, F+%, M:sum C) and has based his assessment of personality modification upon quantitative changes in these signs. While such an approach has the merits of objectivity, quantifiability and ease of statistical handling, it may be contended that the use of isolated Rorschach measures as indicators of change tends to focus on discrete elements taken out of the context of an integrated performance, and thus presents a fragmented or distorted picture of modification in personality structure. What is necessary, according to the alternate view, is a global approach to the Rorschach protocol, in which the various response elements are considered within the framework of the unique pattern of the total Rorschach performance. Hamlin, Berger, & Cummings (1952, p. 109), for example, have suggested that, "That which influences the clinician most in making a judgement may not be an isolated score or sign. He may be influenced most by an insight that emerges from the interplay of many specific factors, or by a total picture of a personality that develops out of the total Rorschach."

Besides permitting the analyst to assign a proper perspective to the various Rorschach elements which lend themselves to quantification, an approach in which the total Rorschach protocol is considered would appear to have the further merits of enabling one to take into account such unquantifiable aspects of the Rorschach performance as the individual style and nuances which characterize specific responses, as well as the sequence in which particular responses are produced.

The present paper reports the results of an attempt to test the hypothesis that a global analysis of Rorschach protocols is more valid than a sign approach in evaluating the effectiveness of a therapeutic program.

A frequently cited study employing the sign approach is that of Muench (1947) who, among other criteria, made use of a list of 22 Rorschach signs of adjustment consisting, for the most part, of indices defined by Hertz (1946). Muench applied these signs to the Rorschach records of twelve patients obtained before and after exposure to non-directive therapy and found that these subjects, as a group, showed improvement on a statistically significant number of the signs. In an attempt to see if Muench's signs would again indicate significant change with therapy when applied to a new and larger sample, Hamlin et al. (1952) assessed the degree of change in 20 of these signs in the pre- and postpsychotherapy Rorschach records of 20 patients. Additionally, the experimenters tested for a change in Buhler's Basic Rorschach Score (1948). The results indicated that, as a total group, the patients did not manifest statistically significant pre- to post-

[1] Expanded from paper read at E. P. A. Convention, Atlantic City, 1956.

therapy differences on Muench's signs of adjustment, although there were slight differences in the expected direction. A significant mean gain was, however, shown in the Basic Rorschach Score.

Additional studies of the effects of psychotherapy in which pre- to posttherapy differences in specific Rorschach signs (not necessarily the ones used by Muench) constituted the principal criterion of change are those of Barry, Blyth, & Albrecht (1952), Cadman, Misbach, & Brown (1954), Carr (1949), Haimowitz & Haimowitz (1952), Lord (1950), and Piotrowski & Schreiber (1952). Changes tending to favor the therapy patients were observed by Cadman et al., Haimowitz & Haimowitz, Lord, and Piotrowski & Schreiber, although statistical tests of significance are reported only by Cadman and by Haimowitz & Haimowitz, while Lord did not employ a control group. On the other hand, Barry et al. correlated changes in 70 Rorschach indices with independent judgements of change in adjustment level and found statistically significant relationships for only three signs. Similarly, Carr, using a list of signs very much like those of Muench, failed to find significant changes following therapy.

It appears, thus, that there is a considerable lack of agreement in the experimental literature about the usefulness of a Rorschach sign approach in evaluating therapeutic change.

Studies in this area in which a more global treatment of Rorschach results was utilized have also not been unanimous in their results. Carr (1949), in addition to his use of the sign approach mentioned above, also asked an experienced Rorschach worker to evaluate therapeutic change by means of a thorough study of total pre- and posttherapy protocols. No significant improvement following therapy was found, in contrast with the fact that a much greater degree of improvement was indicated by independent counselor evaluations. Kessler & Wolfenstein (1953), while apparently applying no statistical tests, reported that for 66 per cent of their cases there was a close agreement between Rorschach assessment of therapeutic change and change on an independent rating scale of behavioral items. Krout, Krout, & Dulin (1952) and Haimowitz & Haimowitz (1952) used a form of global Rorschach approach in which test responses were evaluated in terms of a series of clinically meaningful concepts or categories such as anxiety and reality orientation. Both groups of investigators reported results which, in general, favored the patients receiving psychotherapy.

## Method

In the present study, the relative effectiveness of a global and a sign approach to the Rorschach test as a measure of therapeutic change was assessed by comparison with an independent criterion of response to therapy. It was hypothesized that the global treatment would prove to be the more valid. This study was developed in the context of a research program, carried out at the Boston State Hospital, in which the authors were concerned with the assessment of the effect of an intensive program of ancillary therapeutic procedures upon the adjustment of chronic mental hospital patients (Notman & Williams).

*Subjects.* Forty-eight male and 48 female chronic mental hospital patients constituted the subjects of the present experiment. The mean age of these patients was 41 years, and they had been hospitalized for an average of eight years at the time the study began. All of the females and most of the males had been diagnosed as functionally psychotic. For approximately half of the male and half of the female patients, the therapeutic program consisted of an intensive schedule of ancillary therapies, such as occupational, recreational and educational therapy, vocational guidance, and psychiatric social service casework. The remaining fifty per cent of male and female

patients, though not recipients of this formal intensive program, were, nevertheless, exposed to the varieties and amounts of ancillary and/or somatic therapies commonly received by patients in the usual course of events on a chronic mental hospital service. Additionally, 15 of the females in the intensive ancillary therapy program and 10 in the usual hospital chronic service program received group psychotherapy. For the males, the therapeutic program lasted 21 months, for the females, 14 months. These periods define the pre- and posttreatment intervals of the present study.

These 96 patients were selected from a larger number so as to exclude those whose Rorschach records contained less than nine scorable responses, since it was felt that so few responses did not permit valid statistical manipulation.

*Procedure.* To test the hypothesis of the present study, pre- to posttreatment changes in 11 quantitative Rorschach indices, on the one hand, and a global rating of change based on the total Rorschach protocol, on the other, were compared with an independent criterion of therapeutic progress or change.

Hospital ward social adjustment, as measured by rating scales obtained at the times that the Rorschachs were administered, constituted the independent criterion of therapeutic progress or change. These ward behavior rating scales were completed by nurses and ward psychiatric aides familiar with the patients. Although different rating scales were used for the male and female patients, they were designed to reflect a similar order of behavior. For the male patients, the ward observation items of the Multidimensional Scale for Rating Psychiatric Patients, developed by Lorr, Jenkins, & Holsopple (1953) were used. For the female patients, a ward behavior rating scale developed by the present authors was used. The items in both scales are concerned with such aspects of patients' behavior as assaultiveness, withdrawal, participation in ward social activities, and personal tidiness, and seem to represent a reasonable sampling of social behavior on the ward.

The Rorschach tests were administered to all 96 patients at the beginning and at the conclusion of the therapeutic program already described. In order to minimize variations in performance ascribable to differences in the examiner-testee relationship, the same psychologist administered the pre-and posttests to any one patient in almost all cases. All 192 Rorschach protocols were scored by one person.

The 11 quantitative signs or indices were selected either because of their traditional interpretive significance or because of recent experimental evidence on the basis of which a relationship to therapeutic change might reasonably be expected. The quantitative indices employed were: M+ (human movement with good form level), FC, W− (whole response of poor form level), popular responses, sex responses, F+% (ratio of F with good form level to total F, Klopfer's), (H + Hd)%, and (A + Ad + Aobj)%.

In addition to these, were three indices, derived from criteria described by Friedman and by Phillips, and their associates, which appear to be correlated with sequences found in the normal course of ontogenetic development (Friedman, 1952; Hemmendinger, 1951; Lane, 1955; Phillips & Smith, 1953). The first of these measures, the index of integration, indicates the ratio to the sum of all W and D responses, of those W and D percepts in which an attempt is made first to analyze the blot into a number of parts and then to synthesize these components into a well-integrated good form-level response. The second measure, the index of primitive thought, indicates the ratio to the sum of all W and D responses, of three percepts which are almost universally considered to be pathognomonic of

severe cognitive disfunction: confabulations, contaminations and fabulized combinations.

The third of these developmental indices, the Fx score, was first proposed by Waldman (1950), and reflects the balance of form dominance in all responses involving color and shading. The Fx score is calculated in an analogous manner to the way color responses are generally scored: if the form element is dominant in a response involving color or shading, it is assigned a weight of 0.5; if F is subordinate, a weight of 1.0 is assigned; responses determined by color and shading with F absent are given a weight of 1.5. The sum of the weighted scores in which F is subordinate or absent is subtracted from the sum of the weighted scores in which F is dominant over color or shading. Therefore, the higher the Fx score, the greater the emphasis upon form.

These, then, were the 11 indices, each of which was compared with the independent criterion of therapeutic change.

The global Rorschach judgements of change in adjustment level were made by a highly qualified clinical psychologist who has had a considerable amount of clinical and research experience with the Rorschach.[2] Verbatim pre- and posttreatment Rorschach protocols for each patient, with information identifying the temporal sequence masked, were presented to this judge. On the basis of all the information potentially available in the protocols, and considering the various response elements in whatever combination and with whatever weighting he thought proper, he ranked the two records for each patient in terms of which one appeared to represent a greater degree of social adjustment. In addition, he also indicated, on a four-point scale, the level of confidence with which each judgement was made. Considering those pairs of records for which the judge felt unable to make a confident judgement of change as reflecting no essential pre- to posttreatment differences, it was then possible to classify each patient's response to the treatment program as improved, impaired, or unchanged, as indicated by the global Rorschach judgement of social adjustment. Since all global ratings were made by a single individual, it was, of course, not possible to assess the reliability of these judgements.

*Treatment of the data.* Since many Rorschach indices yield sharply skewed distributions for most populations (Cronbach, 1949), only nonparametric, or distribution-free, techniques were utilized in the evaluation of the data. Pre- to posttreatment differences in six of the 11 Rorschach indices [F+ %, (H + Hd) %, (A + Ad + Aobj) %, Fx score, index of integration and index of primitive thought] were correlated with pre- to posttreatment differences on the independent criterion, ward behavior ratings, by means of Spearman's rank-difference coefficient. The distributions of pre- to posttreatment differences in the remaining Rorschach indices were found to contain a large number of tied scores and, therefore, instead of using a standard correlational technique, the data were treated in the following manner: for each of these Rorschach indices, patients were divided into three groups, according to whether they displayed an increase, a decrease, or no change on that index. The Kruskal-Wallis ranked one-way analysis of variance test (Mosteller & Bush, 1954) was then applied to pre- to posttherapy differences in the ward behavior criterion scores attained by the three distributions of patients. This procedure was followed for the M+, FC, W− and Popular indices. The question assessed by such a procedure was whether there are significant differences among the means of groups of

[2] For these global Rorschach judgements, the authors are very grateful to Dr. J. Warren Thiesen, Chief Psychologist, Boston Veterans Administration Mental Hygiene Clinic.

ward behavior scores, when these groups have been established on the basis of positive or negative change on specific Rorschach measures.

A similar procedure was employed in determining the degree of relationship between global Rorschach judgements of change and the independent criterion. The Kruskal-Wallis test was applied to ward behavior scores distributed among three groups in terms of the category in which each patient was placed along the improved-unchanged-impaired continuum by the global Rorschach judgements.

Since different ward behavior rating scales served as the independent criterion for the male and the female patients, the relationship between each Rorschach measure and the criterion was determined independently for the male and the female groups of patients. The resulting probability values were then combined (Jones & Fiske, 1953).

## RESULTS

The comparison of global Rorschach judgements of change in social adjustment with the ward behavior ratings indicated that these two measures were related at a statistically significant level (Table I).

TABLE I—Global Rorschach Judgements vs. Criterion

| | Kruskal-Wallis statistic | P | Combined P |
|---|---|---|---|
| Males | 5.30 | .07 | |
| Females | 8.30 | .02 | .01 |

The combined probability for the male and female groups' results was equal to .01.

On the other hand, with the exception of (A + Ad + Aobj) %, changes in no one of the 11 quantitative indices proved to be significantly related to changes in the criterion (Table II). No statistical test was applied to changes in the number of sex responses since 81 of the 96 patients failed to produce sexual content in their pre- and posttreatment Rorschach records. An inspection of the data indicated that the 15 patients producing sexual responses were distributed along the entire range of the independent criterion. It was felt, therefore, that this measure was not sufficiently sensitive to be considered an effective index of change in therapy.

The single Rorschach index which was significantly related to the ward behavior criterion was (A + Ad + Aobj) %. For both groups of patients, the correlation was positive, though somewhat low, with a combined prob-

TABLE II—Quantitative Rorschach Indices vs. Criterion

| | | Quantitative Index | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | F+ % | Fx | Index of integration | Index of prim. thought | (H + Hd) % | (A + Ad + Aobj) % | M+ | FC | W− | Popular | Sex | |
| Females Males | Rho or H[a] | .13 | .00 | −.08 | −.18 | −.01 | .28 | .14 | 2.73 | .37 | 3.46 | | |
| | P | .37 | 1.00 | .57 | .21 | .96 | .05 | .95 | .30 | .80 | .20 | | No test |
| | Rho or H[a] | .20 | .14 | .09 | .05 | −.04 | .26 | .66 | .33 | .53 | .85 | | |
| | P | .17 | .33 | .52 | .75 | .79 | .075 | .70 | .80 | .80 | .70 | | |
| | Combined P | .20 | .70 | .70 | .50 | .98 | .025 | .95 | .50 | .90 | .50 | | |

[a]Rho, the rank-difference correlation coefficient, was utilized in relating the following indices to the criterion: F+ %, Fx, Index of integration, Index of primitive thought, (H + Hd) %, and (A + Ad + Aobj) %. H, the Kruskal-Wallis statistic, was utilized with M+, FC, W− and Popular.

ability equal to .025. It may be argued that this is not a genuine relationship of significance since it is likely that, in examining a large number of comparisons, a few may be discovered whose statistical significance is due solely to chance fluctuations. The impact of this argument is mitigated, however, by the fact that correlations of borderline significance between (A + Ad + Aobj) % and the criterion were found in independent analyses of both the male and female patients' responses (see Table II). This is, then, a relationship which is supported by more than a single occurrence; it is indicated in data from two independent groups of subjects, and cannot, therefore, be lightly dismissed.

## Discussion

The results of the present experiment indicated that judgements of change in general social adjustment based on an examination of the total Rorschach protocol were significantly related to an independent measure of change on this variable. On the other hand, all but one of the 11 quantitative Rorschach indices failed to show such a relationship. We are faced with evidence that changes in such time-honored and respected indices as F+ %, M+ and FC fail to relate significantly to a measure of therapeutic change, when considered individually.

It is likely that the reason for this failure lies precisely in the fact that these indices *were* treated discretely. The behavioral correlates of each of these indices have been fairly extensively explored. It is not difficult for the experienced clinician to describe the circumscribed area of the personality to which any one of these measures probably relates. However, when the given task is that of evaluating change in so broad an area as social adjustment, which is the resultant of so many interrelated elements, it is usually insufficient to regard only one segment of the personality in isolation. dynamic and unique balance of many Rather, it is necessary to consider the factors, in the light of which the role of any one aspect may then be properly evaluated. Piotrowski (1943) puts the matter as follows:

> Every person with many *CF's* is emotionally self-centered and labile, but the intensity and frequency of this feeling reaction, the manner in which it is outwardly manifested, and particularly the type of motor reaction it may initiate, cannot be derived from *CF's* alone, but from the *CF's* and the place the *CF's* occupy in the whole record.

In addition, it is likely that the effectiveness of a quantitative sign approach to the Rorschach is limited by distortions introduced merely by the application of arithmetic processes in expressing the performance of a group of subjects on any single index. A change from 3M to 4M is probably not qualitatively equivalent to a change from 7M to 8M; and, in all likelihood, a W:M ratio of 8:4 is to be regarded from a vastly different point of view than a 2:1 ratio. These are distinctions which the clinician can and does make in considering Rorschach protocols in a global manner; they may, however, easily be obscured if the data are treated by considering the number of signs of adjustment on which a group of patients was able to show a quantitative increase. A discussion of this problem, as well as of others related to the quantitative use of the Rorschach, may be found in Mosak (1952). Cronbach's well-known review (1949) of pitfalls in the application of statistical techniques to Rorschach scores is, of course, relevant here also.

Some investigators (e.g., Hamlin et al., 1952) have suggested that it might be possible to produce a more effective list of Rorschach signs if efforts were devoted in the direction of developing more highly refined or more qualitatively demanding indices. At least one study, however, indicates that such a suggestion should not be regarded with excessive optimism. Using 42 patients in client-centered

therapy, Peterson (1954) correlated three different investigators' lists of Rorschach signs of adjustment, presumed to reflect change in therapy, with an independent objective criterion of therapeutic success. His expectation was that the more vigorously defined signs, those involving a greater degree of qualitative specification (e.g., using only M and W based on responses of better than average quality, rather than counting all M and W), would correlate more highly with the criterion. The results of the experiment failed to support the hypothesis.

The finding that the only one of the 11 Rorschach indices to relate significantly to the independent criterion was (A + Ad + Aobj) % was at first rather surprising. It has already been suggested that this is probably not a spurious result. Some understanding of this finding may be gained from a further consideration of the criterion of therapeutic change employed in the present experiment. Because the subjects were chronic hospitalized psychotics, it was thought that pre- to posttreatment changes in a measure of ward social adjustment would constitute a reasonably valid criterion of therapeutic movement. It may be, however, that an increase in stereotypy of thought and behavior such as is generally considered to be reflected in a rise in animal content (Klopfer & Kelley, 1946; Phillips & Smith, 1953) is so essential a component of adjustment to the daily routine of a mental hospital chronic ward, particularly as this is evaluated by psychiatric aides, that it is sufficient to account for a statistically significant relationship between these two factors.

That stereotypy of behavior is not the only, nor perhaps even the most important, factor affecting ward adjustment is suggested by the fact that in the global Rorschach comparisons, which were also significantly related to the ward behavior ratings, (A + Ad + Aobj) % was merely one of a large number of factors which were considered together, and, as indicated by the clinician who made the comparisons, was given only minimal consideration. Nonetheless, it is likely that we have here a specialized instance where behavior in a broad sphere of activities is sufficiently overdetermined by a single personality attribute so that changes in the latter are able to account for a significant proportion of change in the former.

In considering this result, it is important not to lose sight of the specific subject population and, perhaps even more important, the particular criterion of change that was employed. It seems much less likely that (A + Ad + Aobj) % would play so significant a role if one were dealing with the adjustment in the community of a group of non-psychotic patients receiving psychotherapy. Muench (1947), for example, found that his patients (apparently nonpsychotic) displayed little change in animal content following nondirective therapy, while Barry et al. (1952) found that pre- to posttherapy changes in animal content for his 31 patients (for the most part, nonpsychotic) failed to correlate significantly with judgements of adjustment level.

While, therefore, the results of the present experiment indicate that (A + Ad + Aobj) % may be reflecting aspects of the personality which play an essential role in the everyday hospital ward adjustment of the chronic psychotic patient, they do not justify the conclusion that this index, when treated in isolation, may in general be safely considered as a sensitive indicator of personality modification following therapy.

## SUMMARY

The relative effectiveness of changes in 11 quantitative Rorschach indices and of global Rorschach evaluations as measures of response to a therapeutic program was assessed by comparison with changes in independent ratings of ward social adjustment. The

subjects employed were male and female hospitalized chronic psychotics, and the treatment program consisted, for the most part, of an intensive schedule of ancillary therapies.

The results indicated that judgements based on a global assessment of Rorschach protocols were significantly related to the independent criterion, while, with the exception of (A + Ad + Aobj) %, no one of the quantitative Rorschach indices reflected this criterion adequately.

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# Some Effects of Non-Personality Factors on Rorschach Performance

MELVIN ZAX, GEORGE STRICKER AND JONATHAN H. WEISS
University of Rochester

Since 1921, the year in which Hermann Rorschach published his *Psychodiagnostik,* a monograph describing his test, the "ink blot" test has gained ever-increasing attention as both an experimental and a diagnostic device. Concomitant with its growing role as a practical tool, the Rorschach test itself became the subject of much experimental scrutiny and controversy, in an effort to discover both its strengths and limitations. Much of this experimentation concerned itself with individual Rorschach test factors or *determinants,* the verifiability of which, as Beck (1940) has pointed out, is one of the major foundations upon which the test stands. It early became apparent, however, that the parameters affecting performance included not only the personality factors, but also, as Sarason (1950) demonstrated, such non-personality determinants as: (a) the purposes of testing, i.e., the reasons given by the Examiner and the preconceptions of the Subject; (b) the time and place of testing; and (c) the Examiner himself. It becomes important to understand these factors clearly when we attempt to apply interpretive schemes to Rorschach data based upon statistical norms, since these assume that the data have emerged from an essentially standard situation.

The results of research designed to meet this need for more information have been appearing in greater volume as more has been understood concerning the dynamics of the test situation and of the Examiner-Subject relationship. There has been, however, a conspicuous lack of organization of these results. It is felt that the need for such a systematization of findings is becoming more acute, since the current Zeitgeist is bringing the interpersonal aspect of psychological testing, as well as psychotherapy, into sharper focus. This paper will therefore attempt to organize, and, it is hoped, give a meaningful perspective to the findings in the area of the influence of non-personality determinants on test performances.

For the purposes of this paper it has been convenient to posit the four following categories of major focus: (a) Overt set. In these studies *S*s were explicitly instructed to attempt to produce various types of responses and the effects of such induced "sets" were measured; (b) Covert set. An attempt was made to induce particular sets in *S*s in a more subtle manner, e.g., inducing an "anatomy set" by allowing *S*s to see pictures of operations while "waiting" to take the Rorschach. In these studies no explicit instructions were given to *S*s concerning any type of response since the intention was to measure the effects of the subtly induced set; (c) Situational factors. Less clearly defined sets were induced in exposing *S*s to various situations prior to testing; and (d) Examiner variables. The effects of personality and sex variables of the Examiner were studied. In addition the rapport between *S* and *E* was considered.

## THE EFFECTS OF CONSCIOUSLY ASSUMED SETS

In his discussion of the influence of volition on some test determinants, Rorschach (1942) distinguished between those factors which could be increased at will and those which were less subject to such an increase. In the case of the former he felt that, if instructed to do so, *S*s were capable of producing clearer percepts ($F+$), of ordering responses in a rigid sequence ranging from *W* (responses to the blot as a whole) to *D* (responses to relatively common details within the

blots) to *Dd* (responses to rare details), and of responding with greater or fewer interpretations involving *A* (animals) as the content. In each case, however, these deviations from the ordinary mode of responding were thought to be accompanied by a general lowering of the quality of percepts and involving in particular a decrease in *W* and *M* (human movement) responses. On the other hand, Rorschach indicated that only *Ss* capable of giving many *W* and *M* responses in the usual test situation were capable of increasing the number of such percepts through a conscious effort. Thus, in the case of these factors, an increase in productivity was thought to depend upon an individual constitutional tendency, and the abilities involved in making such responses were considered to be in the nature of talents. However, he felt that the production of *C* (color responses) could be influenced to some extent by the creation of a conscious set. Despite this apparent difference, he believed that the relationship between the number of *M* and the number of *C* responses remained constant.

These statements provided a number of hypotheses for a series of studies described by Hutt, Gibby, Milton and Pottharst (1950). They have reported that *Ss* who were instructed to see *M* percepts would do so in a retest to a significantly greater degree than could controls. Furthermore, these new *M* responses were of a type commonly believed to be qualitatively rich and meaningful. Notable shifts in Erlebnistypus (*M*:*C*) resulted since the increase in *M* responses was not accompanied by a corresponding increase in *C* responses. The finding that *Ss* could significantly increase their *M* responses when instructed to see people in action was confirmed in a replication study by Allen and Dorsey (1954). Gibby (1951) investigated the stability of those Rorschach variables presumed to measure intellectual traits. His three groups of experimental *Ss* were instructed either to see *M*, to see as many *D* as possible, or to see *C*, *F*+ and *H* on a retest. He found *W*% *and* (*D*+*Dd*) % to be highly unstable with *W*% showing a significant decrease for all groups on retest and (*D*+*Dd*) % showing a significant or nearly significant increase for all groups. In addition, significant changes in *A*%, *R* and number of content categories were found when a set was established to alter those particular variables. The *F*+% factor, however, was highly stable, even when *Ss* were instructed to emphasize good form.

Two studies which focussed on the reliability of the Rorschach technique also provided data on the volitional modifiability of responses to the Rorschach. Fosberg (1941) in the earlier of these studies asked *Ss*, upon retest to make the best possible impression, or in other cases, the worst possible impression, that they could. Results, reported in the form of correlations indicated a high degree of stability for all indices under all conditions. Because of some concern over the statisical analyses involved, Fosberg's study was replicated by Carp and Shavzin (1950) with a counterbalanced test-retest paradigm for the two experimental conditions. The correlations they reported for separate indices revealed that *D*, *Dd*, *F*+, *F*−*F*, *H*+*Hd*, *A*+*Ad*, and *R* were relatively stable while *W*, *M*, *CF* and color total were comparatively unstable.

These studies challenge some of Rorschach's beliefs concerning the stability of test scores. In particular they contradict his notion that *Ss* can readily change the *F*+% and that Erlebnistypus is a stable ratio, unalterable by conscious effort. The changes in both *M* and color total reported by Carp and Shavzin (1950) for example, occurred even where no direct suggestion was used. It should be noted, however, that in some respects the test of Rorschach's thinking regarding *M* and *W* stability has not been completely adequate. A satisfactory test would require a direct comparison of the capacity to increase,

volitionally, the number of desired responses between those *Ss* originally giving many and those originally giving few.

### THE EFFECTS OF COVERTLY ESTABLISHED SETS

Granting that *Ss* are capable of altering their responding as the result of direct suggestion, the next problem raised is how sensitive is the Rorschach to more subtle suggestion and what effects might less direct influences have on responses. In a widely quoted study, Coffin (1941) found that having *Ss* read one of two experimentally created articles attributed to a Harvard professor prior to testing in which it was asserted that a high status group saw either *W* and *A* responses or *D*+ inanimate responses would result in their seeing a predominance of the combination mentioned in their article. Abramson (1951), using group testing, was also able to cause an increase in *W* and *D* responses by "informing" his groups that individuals of high status tended to perceive a predominance of one type or the other, and that this tendency was related to intelligence. In addition Abramson observed concomitant changes in other categories. *Ss* "set" to see *W* responses showed significant decreases in *R, D, Dd, FM, M*:*C* ratio, *F*% (Klopfer), *A*%, Beck *P* and Klopfer *P* and significant increases in *W, Z* and *C*. *Ss* set to see *D* responses on the other hand, showed significant decreases in *W, A*%, *H*+*A*% and Klopfer *P* and significant increases in *R, D, Dd, m* and *Fc*.

Norman, Liverant and Redlo (1952), arguing that studies of the above type created sets directly related to the testing situation, decided to investigate the effects of an even more subtly induced set. Using a test-retest paradigm they attempted to establish a "food" set in one group of *Ss* and a "movement" set in another through the use of antecedent tasks involving the examination of either 40 colored food advertisements or 20 colored and 20 achromatic photographs of people in action respectively. For the "food set" group, the changes in *R*, *CF*%, (*CF*+*C*)% and Food % were evaluated Only *R* showed a significant change (a decrease at the 10% level). For the "movement set" group differences between *R*, *Fm*%, *M*%, Total *M*% and *H*% were studied and again only *R* showed a significant change (this time a decrease at the five percent level). One must note, however, the failure to conduct an inquiry in this study.

In a similar study, Rabin, Nelson and Clark (1954) had *Ss* wait in a room decorated with either an array of anatomical charts or photographs of nude or semi-nude females. They found no significant differences between these groups and a control group in the number of sex and anatomy responses given.

This series of studies appears to affirm the previously noted instability of *R*, the location indices, some of the commoner content categories, and a few of the determinants. The failure of Norman *et al* (1952) to find any changes in determinants may be related to the noted omission of an inquiry in their study.

### THE INFLUENCE OF SITUATIONAL FACTORS

Studies falling under this rubric differ from those which attempted to establish specific sets in that the created set was usually not well defined and less of an attempt was made to predict the effects of the imposed situation. In a sense, therefore, these were exploratory studies designed to provide data about the practical effects on Rorschach responses of being subjected to certain stresses, undergoing certain types of training, or having already taken either the Rorschach or other psychological tests.

Harrower-Erickson and Steiner (1941) investigated the effect on subsequent retests of taking the Rorschach as a group test. Although their data were not reported in terms of deviations from chance expectancy, the trends

they found suggested that simple repetition of the test was a far more serious factor than those changes in administration involved in group testing. In a later, and comparable study, Rohrer and Edmondson (1956) seem to have confirmed this finding. Comparing group and individual records, significant differences were found in only two indices, with those *Ss* who took the test individually showing a greater percentage of anatomy responses and a greater response production on cards VIII, IX and X. Comparison of the first administration (disregarding type of administration) to the second, revealed significant differences in 12 indices. These were: (a) increases in *D%*, *Dd%*, *S%*, *Hd%*, *Ad%*, *At%*, *F%* (Beck), and *R;* and (b) decreases in *c%*, *FC%* and *P*. Nearly all of the changes observed by Harrower-Erickson and Steiner were in the direction found by Rohrer and Edmonson. The increase in *R* on the second test which was found in both of these studies was also noted by Blechner (1954) in a study discussed below.

Gibby, Stotsky and Miller (1954) were concerned with the effects that other, previously administered, psychological tests might have on responses to the Rorschach. Accordingly, four groups of 20 outpatients were given either the Bender-Visual Motor Gestalt Test, the Thematic Apperception Test, the Wechsler-Bellevue Intelligence Scale or the Goldstein-Scheerer Color-Form Sorting Test prior to the Rorschach. In a fifth group, the Rorschach was given as the first test in the battery. Analyses of variance which were done comparing 11 scoring categories showed no differences that even approached significance.

It is reasonable to wonder whether certain types of training or perceptual experiences might predispose a given *S* to respond to particular determinants or to use certain locations more than he otherwise might. Blechner (1954) and Leventhal (1956), were concerned with precisely this problem. The former attempted to increase color responding by exposing *Ss* to a lecture on visual color perception theories and a session during which slides of brightly and variously colored bits of oddly shaped gelatin papers were shown, some of which suggested an association between the form of the paper and its color. She found subsequent increases in *R* and color responses but also noted similar increases in the records of a control group. Since she failed to compare the two groups, her results are inconclusive.

Leventhal (1956) utilized two types of perceptual training to influence *W* and *Z* responses. His analyses focussed on only the first response to each card in order to control for *R* and he found that one of his training procedures (practice with the multiple-choice modification of the Gottschaldt figures) actually resulted in a significant decrease in *W* and *Z* as compared with controls. Although training with the Mooney Closure Test figures resulted in an increase in *W* and *Z*, this was not significantly greater than the increase found in the control group.

Since the Rorschach is usually administered during a stressful period in the life of the *S*, it is important to understand the specific effects of stress on responding if we are to keep such effects from clouding our understanding of the basic personality picture. Only three studies have approached this problem, with each studying a different type of stress. In a well executed study, Eichler (1951) induced stress by administering three electric shocks of increasing intensity to his *Ss* while they engaged in a test other than the Rorschach. Following this he administered the Rorschach under the threat of still more intense shock. Under these circumstances he predicted and found that Experimental *Ss* gave (a) more weighted shading responses; (b) fewer *W* responses; (c) lower *R;* (d) more oligophrenic details (*Do*) than matched control *Ss*.

Klatskin (1952) studied a group of women who were undergoing presum-

ably great stress (primparous obstetrical patients on the day prior to discharge and other patients on the day prior to undergoing gynecological surgery). It was found that they showed a Rorschach profile significantly different in many respects from that of a matched control group, with the difference being in a direction interpretable as indicating greater pathology.

In another study, Henry and Rotter (1956) induced stress by instructing *Ss* that the Rorschach was used to discover the extent of mental disturbance. As the authors predicted, the experimental *Ss* had a lower *R*, higher $F+\%$ and gave more *P* and *A* when compared to controls.

A comparison of the findings of these studies bearing on the effects of stress reveals that a lowered *R* was found in all cases and, in the two studies which reported on *M*, no changes were found. Otherwise, many of the results were highly contradictory which may be as much a function of the types of stresses involved as the instability of the indices.

A pair of studies, by Meltzoff, Singer and Korchin (1953) and Singer, Meltzoff and Goldman (1952) were devoted to studying the modifiability of *M* responses resulting from a particular type of stress. In both studies it was found that following a prolonged period of motor inhibition, *Ss* made more *M* responses.

In a unique study, Kimble (1945) compared records of *Ss* tested individually and in the presence of at least two other people. He found that only the *C* index, out of 23 tested, significantly changed in the group situation. Such a finding, it should be noted, may be expected on the basis of chance alone.

A summary survey of the results of the type of studies discussed reveals few overall consistencies and much need for further study. It is clear that *R* is highly susceptible to change in a variety of situations. It has also been demonstrated that the pattern of *M* responding is alterable, and that the location scores are relatively unstable. However, many of the other findings are contradictory. There is considerable need to explore further the effects of training and the various dimensions of the stress variable and their relation to Rorschach responding.

## EXAMINER INFLUENCE ON RORSCHACH RESPONSES

Of all research to date, studies dealing with examiner influence have perhaps the most direct relevance to the standard use of the Rorschach. If the picture which emerges from the record is to some extent a reflection of the personality of the Examiner, the interpretative significance of the instrument is seriously threatened unless we have a clear idea of how the examiner's influence is likely to operate.

Studies done in connection with this problem have adopted different lines of attack. The least complex approach has involved a measure of the relationship between a single type of behavior, or characteristic, of the examiner and the subsequent effect on a particular type of response. Wickes (1956), for example, demonstrated that by saying "fine," "good" or "all right" or nodding his head after *M* responses he was able to elicit more *M*s than in the standard administration. Gross (1959) used the same types of reinforcement for *H* responses and elicited significantly more *H*s from experimental *Ss* than from controls.

The effect of the sex of the examiner on the elicitation of overt and covert sex responses was studied by Rabin, *et al.* (1954), Curtis and Wolf (1951) and Alden and Benton (1951). The first two found significant differences between the numbers of overt and covert sex responses appearing in the records of *Ss* tested by male and female examiners. Rabin, *et al.* have stated explicitly that with a female examiner, male *Ss* produced significantly fewer sex responses. Alden and Ben-

ton, on the other hand, found no differences in either number of such responses or numbers of *Ss* making them when comparing the records of a male examiner with those of a female examiner.

Another of the less complex approaches is one in which no effort is made to define the examiner characteristics responsible for the differences seen in the records given by their *Ss*. The study by Cerf (1947) is an example of this approach. Comparing the records elicited by five examiners for *R*, he found 15 critical ratios out of the possible 36 comparisions, to be significant.

Another study which dealt only with the differences in the records elicited by various examiners was done by Gibby, Miller and Walker (1953). They found significant variation for the categories *F*, *C*, *FY* and *YF*.

Gibby (1952) attempted to determine whether important differences in the results of examiners was a function of the type of inquiry they conducted. Therefore he studied the records of a group of examiners whose inquiries were unstandardized and those of a group of examiners using a standardized inquiry. When he compared the scoring of the free association alone to the scoring of the free association plus the inquiry, he found that both groups showed significant changes on almost precisely the same determinants (*F*, color, shading) indicating that the type of inquiry used is probably of less importance than differences between examiners.

Baughman (1951) demonstrated that within the records of 15 examiners there were significant deviations from theoretical values set up on the basis of the observed medians for the entire set of records on 16 separate indices. Furthermore, through a comparison of the records of individual examiners with the group medians it was made apparent that five examiners deviated significantly on from seven to 12 indices while five others deviated on only one or none of the indices, suggesting that some examiners contribute relatively little to the records obtained while others contribute a great deal.

Perhaps the earliest and best known study in this areas was conducted by Lord (1950). Thirty-six *Ss* were each tested by three examiners. On one occasion a standard administration was used, on a second the examiner was "warm, charming, appreciative" in manner and on a third the examiner was a "harsh, rejecting authoritarian figure." The most dramatic finding of her study was that much of the variability in the records was attributable directly to the personality of the examiner regardless of the order or type of administration involved. This would suggest that the examiner cannot successfully conceal his own dynamics by assuming a role. Further studies utilizing personality measures of the examiners are therefore felt to be in order.

Two studies in this direction have been reported. Sanders and Cleveland (1953) tested a group of students (with the Rorschach) before these students underwent training in Rorschach administration. These students were later used as examiners in the study. On the basis of the examiner's own tests and the ratings of them by *Ss* they tested, each examiner was rated for overt and covert anxiety. It was found that the most overtly anxious examiners elicited significantly more *R*, *S*%, and *C* than did the least anxious while the most covertly anxious examiners elicited significantly higher *H*, *M*, *Y*, and Hostility scores, and significantly lower *A*%. Examiners ranked highest in overt hostility elicited significantly more responses suggesting passivity (*Y*%) and stereotypy (*A*%) and significantly fewer *H* responses and responses involving hostile content. Those ranked highest in covert hostility elicited fewer responses suggesting passivity (*Y*%) and stereotypy (*A*%) but more responses involving hostile content, more diversified content and more *H*.

Berger (1954) also attempted to relate examiner characteristics based on the Rorschach records of examiners taken when they were presumably naive. Correlation of examiners' records with those of the *S*s whom they tested yielded significant rhos of .86 for *P*, .80 for *S* and −.54 for *Y* (out of the 12 indices studied).

Thus, research in this area, consistent with other reported studies, reveals the instability of certain scoring indices, *e.g. R*, and, furthermore suggests the operation of a significant complex of variables which was unrecognized by early users of the Rorschach. That the personality characteristics of the examiner can exert a powerful influence on the record of his *S* seems fairly obvious. Studies like those of Wickes (1956) and Gross (1959) suggest that something akin to the effect of operant conditioning may be operating. It seems likely, however, that even more subtle factors also operate which are as yet undiscovered. Further research aimed at uncovering and measuring such variables is essential if the Rorschach is to be improved as a device for appraising personality.

## DISCUSSION

In the studies reviewed above, we have discovered a remarkable lack of systematization, with variables crucial to the Rorschach as well as matters of experimental design being treated in vastly differing, and, at times even idiosyncratic, ways. The method of administration, a logical starting point, is very rarely clearly outlined by authors, but in cases where it is we can note differences in the instructions given to the subjects. The subjects themselves have been drawn from widely different populations, varying from the traditional college sophomore to the schizophrenic patient. The method of inquiry also has received little explicit treatment, and usually is assumed to be "routine" rather than discussed by the author, but what work that has been done leads us to believe that it is a crucial variable deserving of organized and consistent investigation. The scoring of the protocol shows division between the Beck and Klopfer advocates, so that studies of the same determinants may prove to be incomparable only because of the different scoring systems employed. It is almost anticlimactic to add that, in an area notorious for the fact that no two studies are conducted with precisely the same administration and scoring of the Rorschach, attempts at replication of findings are few and far between.

Recognizing the limitations imposed by the lack of internal consistency, and realizing that even studies which purport to be investigating similar relationships are doing so in so divergent a manner as to be incomparable, we have nevertheless attempted to summarize roughly the research status of each variable. In order to do so we have constructed the following table, listing those determinants most consistently investigated and the direction of the findings in the experiments carried out upon them. The table has been subdivided into columns similar to the organization of this paper, so that the reader will be aided in his attempt to interpret the findings. It should be noted that this table will serve as only a crude indicator of determinant stability since studies have been included which were, in our opinion, somewhat loosely designed and executed. It should also be noted that the total number of measures for some determinants has been artificially inflated where those determinants were subject to more than one test in the same study.

Due to the general lack of procedural uniformity and the occasional looseness of design, it would appear that those variables which, despite experimental manipulation, have consistently shown little variation, must indeed be stable and reliable measures. Those determinants showing the least variation are *CF*, *H*, and to a lesser extent, *F*+. On the other hand

TABLE I—Summary of Findings with Respect to the Various Rorschach Indices Studied

| | Overt Set | | Covert Set | | Situational Effects | | Examiner Differences | | Totals | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sig. | Non-Sig. | Sig. | Non-Sig. | Sig. | Non-Sig. | Sig. | Non-Sig. | Sig. | Non-Sig. |
| W, W% | 3 | 1 | 2 | 0 | 3 | 6 | 2 | 2 | 10 | 9 |
| D, D% | 0 | 1 | 2 | 0 | 2 | 4 | 1 | 3 | 5 | 8 |
| Dd, Dd% | 0 | 1 | 1 | 0 | 1 | 4 | 1 | 2 | 3 | 7 |
| S | 0 | 1 | 1 | 1 | 1 | 2 | 3 | 1 | 5 | 5 |
| F, F% | 0 | 1 | 1 | 1 | 2 | 4 | 3 | 1 | 6 | 7 |
| F+, F+% | 0 | 4 | 0 | 1 | 2 | 4 | 1 | 2 | 3 | 11 |
| F− | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 3 |
| M, M% | 2 | 1 | 0 | 2 | 2 | 5 | 1 | 5 | 5 | 13 |
| FM, FM% | 0 | 0 | 1 | 2 | 1 | 2 | 2 | 1 | 4 | 5 |
| m, m% | 0 | 0 | 1 | 1 | 0 | 3 | 1 | 2 | 2 | 6 |
| FC, FC% | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 1 | 3 | 3 |
| CF, CF% | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 2 | 0 | 7 |
| C, C% | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 5 |
| FY | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 |
| YF | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 |
| Y, Y% | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| Total Shade | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 2 |
| Sum C | 0 | 2 | 1 | 1 | 2 | 3 | 1 | 1 | 4 | 7 |
| A, A% | 1 | 3 | 2 | 0 | 1 | 6 | 1 | 3 | 5 | 12 |
| H, H% | 0 | 1 | 0 | 2 | 0 | 4 | 1 | 2 | 1 | 9 |
| Sex | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 2 | 1 |
| Anat | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 1 | 2 | 3 |
| # Cat | 1 | 2 | 0 | 0 | 1 | 3 | 1 | 0 | 3 | 5 |
| Obj | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 1 |
| M/sum C | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 2 | 2 |
| Beck P | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 3 | 2 | 6 |
| Klopfer P | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 3 |
| R | 3 | 3 | 2 | 1 | 3 | 5 | 3 | 3 | 11 | 12 |
| Z | 1 | 0 | 1 | 1 | 1 | 2 | 0 | 0 | 3 | 3 |
| 8-10% | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 1 | 1 | 4 |
| Totals | 12 | 26 | 19 | 22 | 32 | 70 | 33 | 41 | 96 | 159 |

many indices, including those which have profound clinical interpretative implications, show gross variations, and may be classed as unstable. These include *R, W, D, Dd, S, FY, YF, Y, M, FM, A%, F%,* and *Z.*

At this point is seems important to note a distinction in the extra-personality variables which have been found to cause statistically significant variations in the production of a number of indices. Many of these, such as those used in the entire class of studies in which an overt set was established, many of those in the covert set studies and some of those in studies involving situational factors, are artificial insofar as there is little likelihood that they are ever encountered in the actual clinical setting. Their findings are of interest because they demonstrate that one's tendency to make many types of responses is not somehow inherently fixed as was thought by some. Indeed, *Ss* have been found capable of consciously modifying their responses to result in significant variation in most scoring categories. They have also been found to be sensitive to relatively subtle extraneous influences which have caused significant increases or decreases in nearly all of the Rorschach indices. The practicing clinician however is apt to be much more concerned with variations which may result from the even more obscure, hence less well understood, variables which are not being controlled in most testing situations. Likewise he would consider it of little practical import to find that a particular determinant is unstable in the atypical sit-

uation providing it is impervious to the variables which operate in the usual clinical setting.

To elaborate on this point, a cursory investigation of the table would make it appear that the *M* determinant was at least moderately unstable. Closer observation, however, reveals that in two studies (Allen *et al.*, 1953; Hutt *et al.*, 1950) the significant increase in *M* was related to direct suggestion, in one (Carp and Shavzin, 1950), the change in *M* was in response to the instruction to make a poor impression, and in two others (Meltzoff et al., 1953; Singer et al., 1952) significant increases were found as a result of imposing unusual motor restrictions on *S*s. However, none out of the eight measures taken under more nearly standard test conditions showed any significant change in *M*. The implication here is that under the ordinary conditions of administration, *M* is relatively insensitive to influence by external factors, and may be considered a stable index.

A similar condition exists with regard to *A*%. Abramson (1951), Coffin (1941), and Gibby (1951) found significant variation in *A*% as a result of various sets which would not ordinarily operate in the test situation. Other studies show *A*% to be relatively stable when testing is carried out under conditions more closely approximating the standard.

It is perhaps most important from a practical viewpoint to focus on the determinants which have been found to vary in situations representing the closest counterparts to those found in the clinic. To explain such variations the first hypothesis to suggest itself is that the examiner will exert his greatest influence in that part of the testing situation where he interacts the most with the subject, the inquiry. Therefore if we consider the shading determinants (*FY*, *YF* and *Y*) as a class, we may hypothesize that much of their instability is a direct reflection of the fact that shading determinants are nearly always elicited in the inquiry, rather than given spontaneously during the free association. Since the process of inquiring differs radically between examiners, and a complex subject-examiner interaction is involved, it should lead to the highest influence of non-test, individual difference factors. It is those factors which presumably are operative in eliciting shading determinants, and which lead to the great instability of those determinants. Moreover, if this is the case, *F*% also will be unstable, since, should no other determinant emerge in the inquiry, the response is scored *F* by default. There is a remote possibility that the instability of *FM* can be explained as also being due to the necessity of non-spontaneous, examiner influences for elicitation, since often an animal percept is obtained in free association, with the *FM* scoring being derived from an elaboration during the inquiry.

This hypothesis also adequately covers those variables which have consistently been shown to be stable (*F*+, *CF*, *H*, Beck's *P*). According to this hypothesis, all content categories should show stability (*H*, Beck's *P*) as should *F*+, which is usually scored mechanically from tables of adequate form level. *CF* responses are usually given quite explicitly, during the free association, to colorful areas in the blots. Usually, if color is the principle determinant of a response, there is no need for a sensitive inquiry to elicit it. On the other hand, with *FC*, form is the principle determinant and it is the function of the inquiry to determine if color was also employed in forming the response. Thus we would predict from our hypothesis that *CF* would be a stable index, while *FC* would be relatively unstable. An examination of the table shows that this is indeed the case.

It is obvious, however, on further study, that the examiner exerts an influence on even the free association portion of the test interaction. Although *CF*, *H* and *F*+ are relatively stable, other indices which likewise

appear to be independent of the inquiry such as *R, W, D, Dd, S,* and *Z* show considerable instability. Variations in these categories can only be explained, therefore, on the basis of the initial structuring of the situation and the many subtle elements which account for the uniqueness of each examiner. Undoubtedly, as Schachtel (1945) has hypothesized, *S*'s response tendencies are closely related to the type of subjective definition he has of the situation and this is apparently developed early enough in the interaction to render the location and organizing indices unstable.

In all instances, the variations discussed above were statistical ones. It is conceivable therefore, that many of these differences of single variables, while significant statistically, may be of little import interpretatively, especially when the protocol is considered in entirety, as it is in the clinical situation. To uncover those unstable indices which are of interpretative significance, while undoubtedly a formidable task, would be of prime importance in evaluating the practical applicability of the Rorschach by providing basic information on the question of overall Rorschach reliability.

In suggesting directions which future researchers might take, one is embarrassed by the "riches" he finds in this area. It is eminently clear that what has been done till now has served only to suggest the magnitude of the problems which lie ahead. It is our bias that the area which should be attacked initially is that dealing with the role the examiner plays in the production of test material. This is important both because it will contribute pertinent knowledge about an instrument on which many people rely in dealing with the problems of patients and also because it will undoubtedly provide information which will have relevance for other test situations and possibly interview situations of a less structured type. More specifically, studies like those of Lord (1950), Sanders and Cleveland (1953) and Berger (1954) need to be done in order that known characteristics of the examiner may be related to idiosyncratic reactions elicited from tested *S*s. Perhaps an even more fundamental need is for investigations of the varying effects of different administrative procedures, as has been urged by Hertz (1951). This review lends evidence to her contention that the mode of structuring the task and conducting the test itself, especially the inquiry, has great bearing on the results acquired.

## Summary

Studies dealing with factors, apart from the personality of the subject taking the Rorschach, which influence the responses made, have been reviewed. These have been categorized according to whether they involved the overt or covert establishment of a set to respond in a particular way, the study of the effects of a general situation on the responses made, or the influence of particular examiners on the types of records which were elicited. Based on the findings in these studies, certain indices have been identified as relatively stable and others as being unstable. A distinction was drawn between those found to be unstable under circumstances which were not typical of the actual testing situation and those which were variable in the usual clinical interaction. It was concluded that more systematic research needs to be done, especially with regard to procedural differences in administration and personality differences in examiners.

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# BOOK REVIEWS

## CLINICAL PSYCHOLOGY IN THE USA AND IN FRANCE

**1. Daniel Brower and Lawrence E. Abt,** *Progress in Clinical Psychology,* Volume III, 1959, N.Y., Grune & Stratton.

**2. Pierre Pichot.** *Les Tests Mentaux en Psychiatrie,* 1949, Paris, Presses Universitaires de France.

**3. André Rey,** *L'Examen clinique en Psychologie* (The clinical examination in psychology) 1958, Paris, Presses Universitaires de France.

**4. Dimitri Voutsinas,** *Dix années de psychologie française* (1947-1956) (Ten years of French Psychology) 1957, Group d'études de psychologie de l'université de Paris.

**5.** . . . . . *Documentation sur la psychologie française,* 1958, Group d'etudés de psychologie de l'université de Paris.

The title of a recent book by Rey (3) suggested an interesting comparison between practices in France and in the USA, as presented in the most recent volume of Brower and Abt's Progress in Clinical Psychology. (1)

However, after reading Rey it seemed at first that this book did not truly represent clinical psychology in France. The question is whether this is because Rey is professor of educational psychology or because his chair is in Geneva. Or is the author merely presenting a very personal view? After a 22 page long discussion of the role of psychology as a medical ancillary science he discusses at some length intelligence tests and some nonverbal performance tests with an oblique reference to projective tests. The most interesting part of the small volume is the description of six rather novel tests — five cognitive and one neurological — constructed by the author. There is hardly a word about personality tests in the book, let alone about psychotherapy.

Can the picture that emerges be considered representative of clinical psychology in French speaking countries? There are those who think so. In the last chapter of Brower and Abt, David discusses clinical psychology in other lands and holds out little current hope for clinical psychology in France. Voutsinas mentions in the preface to his convenient collections (3-4) of bibliographic references to psychological papers published in French journals during the years 1947-1957, that in France psychology often speaks with the voice of the non-psychologist. As a matter of fact a good deal of the psychological papers and books in France are published by individuals whose primary training was not psychology but law, medicine, biology, engineering or even military science. One of the best texts on the use of psychological tests in psychiatry is actually written by Pichot who is a psychiatrist (2).

Two facts contribute to this state of affairs: in the first place, students of all departments in French universities, may — and many indeed do — attend lectures on psychology as part of a self selected diet of cognates. Men of the stature of Binet, Pieron and Ribot gained audiences which were not limited to future psychiatrists or psychologists. In the second place, it was not till 1947 that a "License de Psychologie", i.e., a professional diploma in psychology, was established at the Sorbonne, the professional school of the University of Paris. In a country like France with its centralized and uniform administration and its emphasis on examinations and diplomas this had to retard the development of a professional identity for all psychologists, and especially for clinical psychologists.

On the other hand, this centralized administration made possible the establishment of a National Institute of Vocational Guidance with offices in all areas of France and its own journal and research center as well as a system of examinations and in-service training. Furthermore, since the last war there has been a remarkable increase in interest in psychoanalytic theory in France as shown by the many references in Voutsinas. Perhaps the differences between American and French clinical psychology are largely a matter of time, with American clinical psychology some years in the lead. A comparison of French clinical psychology with clinical psychology in other European countries would probably lead to a more useful appraisal.

That the growth of a distinct professional group of clinical psychologists in the USA has led to an increasing concern with professional problems as opposed to purely scientific problems is attested by several chapters in Brower and Abt. Schwartz discusses

the intra- and inter-professional difficulties and public responsibilities of the clinical psychologist, Piotrowski discusses the consulting function of the psychologist and proposes a model format for the psychological report while Gurvitz points to the economical problems of the psychologist. He points out that clinical competence includes the efficient and economical use of the client's and the psychologist's time. Other chapters deal with the social matrix within which the personality is embedded (Abt), the importance of contradictory evidence in psychological assessment, i.e., "disparity" data (Brower), the need for instruments aimed at the various levels of personality (Carr), and the decision process in selecting the proper instruments (Bachrach), while Hutt asks whether the demonstrated influence of the examiner on the client's test performance does not make questions concerning the reliability and validity of diagnostic procedures meaningless in the clinical setting.

Few, if any, psychologists in France are engaged in psychotherapy judging by the paucity of papers on the subject. The comparison of America with France will end here because the remaining second half of Brower and Abt deals with psychotherapy.

Butler reviews research based on Roger's "Freudian" technique. Joseph describes the current status of psychoanalytic theory and practice. Riess in his assessment of publications during 1956 and 1957 on diagnosis and therapy demonstrates "the increased rapprochement between the 'hardboiled' laboratory psychologist and the 'soft-headed' clinician." Wolskin warns us that mysticism and psychoanalysis are basically incompatible, basing his warning on an unusually informative analysis of the nature of mysticism. Asya Kadis and Markowitz present a detailed analysis of the literature on group therapy as well as a 340-item bibliography, while Woltman discusses play therapy. Diller delineates the role of rehabilitation in clinical psychology. A chapter by Kaplan on pharmacologic aids to psychotherapy discusses the effects of tranquilizers such as Chlorpromazine, Compazine, Mepazine, Reserpine and Meprobamate, stimulants such as Pipradol, Frenguel, Ritalin and Marsilid and concludes with some notes on Mescaline and LSD-25.

In the penultimate chapter Phillips confronts psychoanalytic theory with the newer approaches of Rotter, G. A. Kelly and himself.

In conclusion it is clear from this review that the American lead in clinical psychology is indeed impressive. The very existence of a regular review publication of this kind is ample evidence by itself.

STEVEN G. VANDENBERG
Mental Health Research Institute
University of Michigan

# ANNOUNCEMENTS

## REGIONAL REPORTS

PHILADELPHIA DIVISION
of the
SOCIETY FOR PROJECTIVE TECHNIQUES

Program 1959-1960

October 23, 1959, 3:00 p.m., "Contribution of Psychology to New Concept of Psychiatric Diagnosis", Molly Harrower, Ph.D., Chairman of New State Advisory Council in Psychology; Professor of Research in Clinical Psychology in Department of Psychiatry at Temple University Medical Center.

December 18, 1959, 8:00 p.m., "Repression As An Explanation of the Poetzl Phenomena, Indirect Recall of Fleeting Impressions Via Dreams", Lester Luborsky, Ph.,D., Professor of Psychology in Department of Psychiatry at University of Pennsylvania; Formerly senior research psychologist at Menninger Foundation.

January 22, 1960, 8:00 p.m., "Impressions of European Psychology", Zygmunt Piotrowski, Ph.D., Professor of Clinical Psychology at Jefferson Medical College; V. A. Consultant.

March 4, 1960, 8:00 p.m., "Notes in "shorthand" and "longhand" recording in the test situation', Raymond Birdwhistell, Ph.D., Coordinator, Child and Family Development Research, Eastern Pa. Psychiatric Institute; Formerly Professor of Anthropology, University of Buffalo.

May 20, 1960, 8:00 p.m., "Overt Behavior as Predicted by Projective Techniques, Panel Discussion", Zygmunt Piotrowski, Ph.D., Chairman.

Jules C. Abrams, Ph.D., Private Practice; Psychologist at Mahnemann Medical College and Hospital; Temple University Reading Clinic.

Thomas J. Johnson, Ph.D., Chief Psychologist, Adult Unit, Eastern Pennsylvania Psychiatric Institute.

Carlton W. Orchinik, Ph.D., Psychologist, Municipal Court of Philadelphia; Youth Study Center.

Harry J. Woehr, Ph.D., Management and Consulting Psychologist, Harry J. Woehr and Associates.

All meetings held at Jefferson Medical College, 2nd Floor Lecture Room, 1025 Walnut Street.

All meetings open without charge. For further information please contact:

Mrs. Pat Bricklin, Secretary, Reading Clinic, Temple University.

Stanton B. Felzer, Ph.D., President, Philadelphia Division, Soc. for Projective Techniques, Harry J. Woehr & Associates, 901 Girard Trust Building, Lo 7-0834.

## WORKSHOPS

The University of Chicago announces two workshop seminars in the Rorschach test in the summer of 1960. The subject the first week will be: Basic problems of administration. Processing the associations. Psychologic significance of the test variables. The whole personality in the Rorschach test. Introduction to interpretation.

The second week: Advanced clinical interpretation. Overt symptoms and their underlying source traits as leads to diagnostic differentiation. The problems of neurosis or schizophrenia; of organic or psychodynamic reaction patterns. Schizophrenia in children. Implications for treatment. Dr. S. J. Beck will conduct both seminars. The dates are: July 5-9; July 11-15. Interested persons may write to: Workshops, Department of Psychology, The University of Chicago, Chicago 37, Illinois.

## CALL FOR A.P.A. SYMPOSIA

Anyone who is interested in presenting a symposium at the annual convention with the A.P.A. in September is invited to submit his proposal to Bertram R. Forer, 2170 Live Oak Dr., East, Los Angeles 28, California.

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Palisades A 1944
Rockland County, N.Y. F 1945

ABRAMS, Elias N. (Ph.D.)
178 E. 59th St.,
Brooklyn 3, New York A 1952

ABRAMS, Jules C. (Ph.D.)
1505 Paper Mill Road
Philadelphia 18, Pa. A 1955

ABRAMS, Julian (Dr.)
Psychology Department
Springfield State Hospital
Sykesville, Md. A 1954

ABRAMS, Ray H. (Ph.D.)
408 S. Lansdowne Avenue
Lansdowne, Pa. A 1950

ABRAMSON, Leonard S. (Ph.D.)
Box 185, Fort Meade A 1948
South Dakota F 1955

ABT, Lawrence Edwin (Ph.D.)
151 Rockland Avenue
Larchmont, N.Y. A 1951

ACKERMAN, Bernard R.
124 E. 91st Street
New York 28, N.Y. A 1943

ADAMS, Henry B. (Ph.D.)
McGuire VA Hospital
Richmond, Va. A 1957

AINSWORTH, Mary D. (Ph.D.)
Dept. of Psych.
Johns Hopkins Univ. A 1948
Baltimore 18, Md. F 1950

AKAVIA, Mr. Uriel
41 King Solomon St.
Tel Aviv, Israel A 1959

ALCOCK, Miss Theodora
Tavistock Institute of
Human Relations
2 Beaumont St., A 1950
London, W.I., England F 1953

ALEXANDER, Herbert M.
547 Barbara Drive
Norristown, Pa. A 1958

ALEXANDER, William A.
Hawthornden State Hosp.
Macedonia, Ohio A 1955

ALLEN, Doris Twitchell (Ph.D.)
30 W. Fountain Avenue
Glendale, Ohio A 1949

ALLEN, Robert M. (Ph.D.)
Department of Psychology
University of Miami A 1949
Miami 46, Florida F 1951

*ALOZERY, Jessie Jervis (Ph.D.)
314 E. 41st St.
New York 17, N.Y. F 1940

ALTMAN, Charlotte Hall
Institute for Juvenile (Ph.D.)
Research
907 South Wolcott Avenue
Chicago 12, Ill. F 1956

AMCHIN, Abraham
8 Lyons Ave.
So. Farmingdale, N.Y. A 1952

AMES, Mrs. Louise Bates
Gesell Institute of Child
Development
310 Prospect Street
New Haven 11, Conn. A 1951

ANASTASIO, Mary M.
10 Downing Street, Apt. 5-L
New York 14, N.Y. A 1952

ANDERSON, Helen Joan
Suite 829, Hotel Bossert
98 Montague Street
Brooklyn 1, N.Y. A 1949

ANTWARG, Alexander
2275 Barker Ave.,
Bronx 67, N.Y. A 1955

APPELL, Melville J.
388 Browncroft Blvd. A 1950
Rochester 9, New York

ARMON, Mrs. Mary Virginia
470 W. Avenue 43
Los Angeles 65, Calif. A 1946

ARNAUD, Sara H. (Ph.D.)
Arsenal Family &
Children's Center
40th St. and Penn Ave.
Pittsburgh 24, Pa. A 1958

ARONSON, Marvin L. (Ph.D.)
225 E. 73rd Street
New York 21, N.Y. A 1951

ASHER, Miss Miriam
241 West 4th St.
New York 14, N.Y. A 1960

AUERBACH, Mrs. Aline B.
440 East 56th Street
New York 22, N.Y. A 1944

AZIMA, Mrs. Fern Cramer
Allan Institute
1025 Pine Avenue W.
Montreal, P.Q., Canada A 1951

BACHRACH, Arthur J. (Ph.D.)
Div. of Behavioral Science
University of Virginia
School of Medicine A 1950
Charlottesville, Va. F 1954

BAKER, Corinne F. (Ph.D.)
1839 Farmington Road
East Cleveland 12, O. A 1943

BAKER, Gertrude (Ph.D.)
2726 Montana Avenue
Santa Monica, Calif. A 1948

BAKER, Lawrence M. (Ph.D.)
Department of Psychology
Purdue University
Lafayette, Indiana F 1956

BALKEN, Eva Ruth (Ph.D.)
133 East 58th Street
New York 22, N.Y. A 1948

BARAHAL, George D. (Ph.D.)
Clinical and Ed. Psychology
Wayne University
Detroit 1, Mich. A 1954

BARBARA, Dr. Peter Paul
Box 31
Green Farms, Conn. A 1952

BARKLEY, Bill J. (Ph.D.)
1856 Coventry Road
Cleveland, Ohio A 1950

BARON, Louis K.
6238 N. Tenth Street
Philadelphia 41, Pa. A 1951

BARON, Samuel (Ph.D.)
310 West 86th St.
New York 24, N.Y. A 1944

BARRELL, Robert P. (Ph.D.)
Psychology Department
Veterans Adm. Hospital
Downey, Ill. A 1952

BARRINGER, Benton E. (Ph.D.)
209 Howell St.
Canandaigua, N.Y. A 1951

BARRY, John R. (Ph.D.)
Western Psychiatric Inst.
3811 O'Hara Street
Pittsburgh 13, Pa. A 1953

BARTLETT, Mrs. Doris A.
924 West End Avenue
New York 25, N.Y. A 1949

BAUGHMAN, Emmett Earl
Dept. of Psychology (Ph.D.)
Univ. of North Carolina
Chapel Hill, N.C. F 1957

BEALE, Elizabeth A., Ph.D.
4427½ Finley Ave.
Los Angeles 27, Calif. A 1951

BEARDSLEY, Katherine (Ph.D.)
Clinical Psychology Branch
St. Elizabeth's Hosp.
Washington 20, D.C. A 1958

BEATTY, Miss Eleanor
Child Study Inst.
Bryn Mawr College
Bryn Mawr, Pa. A 1958

BEAUCHEMIN, Jean M.
10793 Esplanade
Montreal 12, Quebec
Canada A 1952

BECK, Samuel J. (Ph.D.)
Department of Psychology
University of Chicago
Chicago 37, Ill. F 1950

BEISEL, Mrs. Lillie Burling
104 Beach Avenue
Larchmont, N.Y. A 1944

BELL, John E. (Ed.D.)
1112 Hillview Road
Park Hills A 1949
Berkeley 8, Calif. F 1951

BELLAK, Leopold (M.D.)
1160 Fifth Avenue A 1948
New York 29, N.Y. F 1952

BERAN, Marianne (Ph.D.)
408 First Avenue
New York 10, N.Y. A 1949

BERGSTROM-BORLAND, Mrs. Ingrid
1025 Las Orejas Ave.
San Rafael, Calif. A 1956

BERLINER, Anna (Ph.D.)
Pacific University
Forest Grove, Ore. A 1954

BERLINER, Mrs. Hildegarde
120 Commonwealth Ave.
San Francisco 18, Cal. M 1959

**BERNSTEIN, Mrs. Hilde R.**
5470 Hydepark Blvd.
Chicago 15, Ill. A 1953

**BERNSTEIN, Louis (Ph.D.)**
208 S. 36th St.
Philadelphia 4, Pa. A 1957

**BERNSTEIN, Mildred R. (Ph.D.)**
498 Hempstead Ave.
Malverne, L.I., N.Y. A 1950

**BERRICK, Myron E. (Ph.D.)**
1086 Ocean Avenue
Brooklyn 30, N. Y. A 1955

**BIELIAUSKAS, Vytautas J.**
Xavier University
Cincinnati, Ohio F 1956

**BILLIG, Otto (M.D.)**
Department of Psychiatry
Vanderbilt University
Hospital A 1941
Nashville, Tenn. F 1950

•**BILLINGS, Edward G. (M.D.)**
1820 High Street
Denver 6, Colo. F 1940

**BINGHAM, Dr. David Starr**
213 Crescent St.
Northampton 94, Mass.
St. Aff. 1955

**BISSIRI, Gerald R. Mr.**
4410 West Avenue 42
Los Angeles 65, Cal. A 1959

**BLAU, Theodore H. (Ph.D.)**
213 E. Davis Blvd. A 1955
Tampa 6, Fla. F 1956

**BLESSING, Harold D. (Ph.D.)**
3827 Nancy Avenue
Dunlinden Acres
Wilmington 8, Del. A 1953

**BLUM, Lucille Hollander (Ph.D.)**
4 East 89th St.
New York 28, N.Y. A 1947

**BLUMSTEIN, Mrs. Molly G.**
5219 Wayne Avenue
Philadelphia 44, Pa. A 1948

**BOGARDUS, Helen (Ed.D.)**
323 14th Avenue North
Seattle 2, Wash. A 1949

**BOLES, Glen (Ph.D.)**
251 Central Park West
St. Aff. 1953
New York 24, N.Y. A 1957

**BOLGAR, Hedda (Ph.D.)**
Psychiatric and
Psychosomatic
Research Institute,
Mt. Sinai Hospital
8720 Beverly Blvd.
Los Angeles 48, Calif. F 1956

**BONDEL, Gertrude (Ph.D.)**
2049 McGraw Ave. St. Aff. 1953
New York 62, N. Y. A 1954

**BOSNER, Mrs. Jane Potter**
38 Manor Drive
Red Bank, N.J. St. Aff. 1957

**BOURKE, William T. (Ph.D.)**
7 E. 75th St.
New York, N.Y. A 1950

**BOWDLEAR, Charles M. (Ph.D.)**
Psychology Services
VA Hospital
Sepulveda, Calif. A 1957

**BOWERS, Scott T. (Ed.Dr.)**
Dayton St. Hosp.
Dayton, Ohio A 1956

•**BRADWAY, Katherine P. (Ph.D.)**
41 Monte Mar Drive A 1940
Sausalito, Calif. F 1949

**BRAMWELL, Paul F.**
4995 Bon Air St. #3
Salt Lake City 17, Utah
A 1957

**BRANDT, Rudolph J. (Ph.D.)**
435 N. Roxbury Drive
Beverly Hills, Calif. A 1950

**BRAUN, Mrs. Roslyn R.**
170-15 Highland Avenue
Jamaica Estates 32, N.Y. A 1949

**BRECHER MARER, Sylvia**
4321 244th St. (Ph.D).
Douglaston, N.Y. A 1951

**BRICKLIN,**
Mrs. Patricia McIntosh
Reading Clinic
Department of Psychology
Temple University
Philadelphia 22, Pa. A 1958

**BRODIE, Mrs. Dorothy B.**
4833 Tenth Ave. N. A 1943
St. Petersburg, Fla. F 1950

**BRODY, B. Abraham (Ph.D.)**
29 Heatherbloom Road
White Plains, N. Y. A 1952

**BRODY, Claire M. (Ph.D.)**
73 Ivy Lane
Englewood, N. J. A 1955

**BRODY, Gertrude Gillenson**
29 Heatherbloom Road
White Plains, N. Y. A 1948

**BROOMHEAD, Elizabeth**
5350 42nd Place, N.W.
Washington 15, D. C. A 1944

•**BROSIN, Henry W. (M.D.)**
University of Pittsburgh
Western Psychiatric Institute
3811 O'Hara Street
Pittsburgh 13, Pa. F 1940

**BROWER, Daniel (Ph.D.)**
300 N. Mountain Ave. A 1943
Upper Montclair, N. J. F 1954

**BROWER, Mrs. Judith F.**
300 N. Mountain Avenue
Upper Montclair, N. J. A 1948

**BROWN, Fred (Ph.D.)**
Mt. Sinai Hospital
Fifth Ave. and 100th St. A 1948
New York, N. Y. F 1950

**BROWNFAIN, John J. (Ph.D.)**
21174 Greenview Ave.
Southfield, Mich. A 1954

**BROZOVICH, Stanley M.**
449 E. Pine
Altadena, Calif. A 1953

**BRUCE, Martin M. (Ph.D.)**
71 Hanson Lane
New Rochelle, N. Y. A 1952

**BRUNSCHWIG, Lily (Ph.D.)**
420 Conshohocken State
Road, Cynwyd, Pa. A 1953

**BRY, Mrs. Mae G.**
59 W. 12th Street
New York 11, N. Y. A 1954

**BUHLER, Charlotte (Ph.D.)**
1127 N. Sweetzer A 1943
Los Angeles 46, Calif. F 1951

•**BURCHARD, Edward M. L.**
1230 Park Ave. (Ph.D).
New York 28, N. Y. F 1940

**BURDICK, Mrs. Jeanne H.**
2236 Edgewater Ter.
Topeka, Kans. Aff. 1957

**BURGEMEISTER, Bessie B. (Ph.D.)**
1175 York Avenue A 1942
New York 21, N.Y. F 1947

**BURTON, Arthur (Ph.D.)**
5055 Northlawn Drive A 1949
San Jose 30, Calif. F 1956

**CALABRESI, Renata A. (Ph.D.)**
360 Central Park West A 1944
New York 25, N. Y. F 1950

**CALIGOR, Leopold (Ph.D.)**
175 Riverside Drive
New York 24, N.Y. A 1952

**CALVERT, Margaret**
73510 Mountain St., Apt. 1
Montreal, Quebec, Can.
A 1952

**CANTAROW, Mrs. Elizabeth S.**
2033 Delancey Street
Philadelphia 3, Pa. A 1950

**CANTER, Aaron H. (Ph.D.)**
2939 N. 47th Street A 1949
Phoenix, Ariz. F 1952

**CAPELL, Martin D. (Ph.D.)**
18258 Fremont St.
Livonia, Michigan A 1958

•**CARO, Mrs. Elizabeth R.**
2014 Grove Avenue
Richmond, Va. A 1940

**CARPENTER, Kenneth E. (Ph.D).**
1164 Kingston Road,
Kingston, R. I. A 1953

**CARR, Arthur C. (Ph.D.)**
Psychiatric Institute
722 West 168th Street
New York 32, N.Y. A 1953

•**CARROLL, Clara**
Bureau of Child Guidance
80 Lafayette, 11th Floor
New York 13, N.Y. F 1940

**CARSON, Marjorie**
Children's Aid Soc. of
Metropolitan Toronto
33 Charles Street East
Toronto 5, Ont., Can. A 1952

**CARTER, Linda Louise**
1115 Wertland Street
Charlottesville, Va. A 1949

**CARTWRIGHT, Robert W.**
21470 Providencia Street
Woodland Hills, (Ph.D.)
Calif. A 1952

**CASSEL, Russell N. (Ed.D.)**
17187 Hawthorne Ave. A 1954
Fontana, Calif. F 1955

**CEASE, Eugene**
Box 234
Warren State Hospital
Warren, Pa. A 1951

**CENTERS, Louise Van Core (Ph.D.)**
3676 Mandeville Canyon Rd.
Los Angeles 49, Calif. A 1958

**CHARNY, Israel W. (Ph.D.)**
Oakbourne Hospital
1030 S. Concord Rd.
West Chester, Pa. A 1957

**CHAYKIN, Albert**
Guidance Center
University of Miami
Coral Gables, Fla. A 1956

**CHU, Thomas W.**
770 West End Avenue
New York 25, N. Y. A 1955

**CICCARELLO, Miss Jennie**
Psychology Dept.
Univ. of Portland
St. Aff. 1956
Portland 3, Oregon A 1958

•**CLAPP, Mrs. Hazel S.**
233 Argonne Circle
Santa Barbara, Calif. A 1940

**CLARK, W. Donald**
567 Davidson Road
New Brunswick, N.J.
St. Aff. 1960

**CLAUSS, Helen O.**
23 Glenn Street
Chambersburg, Pa. A 1951

**CLERK, Mrs. Gabrielle Brunet**
249 Lockhart
Town of Mt. Royal
Quebec, Can. A 1949

COHEN, Mrs. Mathilde Weill
46 E. 91st Street
New York 28, N. Y. A 1942

•COHN, Frederick E. (M.D.)
77 E. Market Street
Rhinebeck, N. Y. A 1940

COHN, Mrs. Ruth C.
159 Liberty Road
Englewood, N. J. A 1946

COLE, Joseph Carl (Ph.D.)
Metropolitan State Hospital
Psychology Department
Norwalk, Calif. A 1949

COLM, Hanna (Ph.D.)
3 Overhill Road
Falls Church, Va. A 1944

COLVIN, Ralph (Ph.D.)
Astor Home for Children
Rhinebeck, N.Y. A 1956

CONVERS, Miss Josefina Vergard
Cerrera 9, #58-07
Bogota. Colombia St.Aff.1957

COOK, Philip H. (Ph.D.)
Department of Labour and
National Service
Swanston Street
Melbourne c.1 A 1941
Victoria, Australia F 1949

COPEL, Sidney L.
5606 Wyndale Avenue
Philadelphia 31, Pa. A 1956

COUGHLIN, Mrs. Anne Malone
Dept. of Psychiatry
Montreal General Hospital
Montreal, P. Q. St.Aff. 1954

•COWIN, Marion
433 West 21st Street
New York 11, N. Y. F 1940

COX, Rachel Dunaway (Ph.D.)
503 Walnut Lane A 1950
Swarthmore, Pa. F 1952

CRASILNECK, Harold B.
University of Texas (Ph.D.)
Southwestern Medical
School
5323 Harry Hines Blvd.
Dallas, Texas A 1956

CRILE, Mrs. Mary
Big Sur, Calif. A 1945

CROVETTO, Lorraine
703 Carondelet Street
New Orleans 12, La. A 1953

CRUMPTON, Evelyn (Ph.D.)
1451½ Barry Avenue
Los Angeles 25, Calif. A 1955

CUMMINGS, C. Peter (Ph.D.)
555 Weadley Road
Strafford, Pa. A 1954

CUNNINGHAM, Mrs. Cornelia
100 Chesney Lane
Philadelphia 18, Pa. A 1950

DANA, Richard H. (Ph.D.)
Dept. of Psych. & Sociology
Univ. of Nevada
Reno, Nev. A 1956

D'ANGELO, Rita Y.
2604 University Avenue
Bronx 68, N. Y. A 1955

DAVENPORT, Beverly (Ph.D.)
2042 Oliver Avenue
San Diego 9, Calif. A 1949

DAVID, Miss Charlotte
4925 North Willamette Blvd.
Portland 3, Oregon A 1959

DAVID, Henry P. (Ph.D.)
New Jersey State
Dept. of Inst. & Agencies
State Office Building
135 W. Hanover St.
Trenton 25, N.J. A 1953

DAVIDSON, Alene (Ph.D.)
7658 175th St.
Flushing 66, N.Y. A 1953

•DAVIDSON, Helen H. (Ph.D.)
90 La Salle St.
New York, N.Y. F 1940

DAVIS, John A. (Ph.D.)
2444 Archwood Drive
Dayton 6, Ohio A 1955

DAVISON, Arthur H. (Ph.D.)
Chief Psychologist
Sonoma State Hosp. A 1952
Eldridge, Calif. F 1953

DEAN, Sidney I. (Ph.D.)
3308 Livingston
Salem, Oregon A 1958

DE MARTINO, Hugo A.
2823 Walker Drive, RFD 2A
Peekskill, N.Y. A 1958

DERI, Mrs. Susan K.
235 W. 76th Street A 1948
New York 23, N. Y. F 1950

DERNER, Gordon F. (Ph.D.)
Department of Psychology
Adelphi College A 1949
Garden City, N. Y. F 1951

DE VAULT, Mrs. Barbara Allen
Butler Health Center
333 Grotto Avenue
Providence, R.I. A 1953

DE VAULT, Helen C.
593 33rd Street A 1950
Manhattan Beach, Calif.

DE VOS, George (Ph.D.)
Lecturer in Social Welfare
Univ. of California
Berkeley 4, Calif. F 1957

DIAMOND, Mrs. Florence
135 Sierra View Road
Pasadena 2, Calif. A 1950

DIANA, Pearl Butler (Ph.D.)
4111 Hillcrest Rd. A 1949
Richmond, Va. F 1951

DICK, Miss Frances
284 Eastern Parkway
Brooklyn 25, N.Y. A 1958

DIEPPA, Jorge J. (Ph.D.)
Escuela de psicologia
Faculdad de Humanidades
y Educacion, Univ. Central
de Venezuela
Caracas, Venezuela A 1958

DINGMAN, Paul R. (Ph.D.)
1206 Pleasant
Des Moines 14, Iowa A 1950

DOAK, Mrs. James
RFD 2
Concord, N. H. A 1953

DOMINGUEZ, Kathryn (Ph.D.)
126 Tyson Road
Newtown Square, Pa. A 1943

DONOGHUE, John
Psychology Department
The Lafayette Clinic
951 E. Lafayette
Detroit 7, Mich. St. Aff. 1959

DORKEN, Herbert, jr. (Ph.D.)
Community Mental Health
Services
Dept. of Public Welfare
117 University Ave. A 1949
St. Paul, Minn. F 1951

DOUGHERTY, Mrs. Margaret R.
1804 Roselynn Avenue
Scranton 10, Pa. A 1944

DOWLEN, Caroline (Ph.D.)
1513 Ardmore
Las Vegas, Nev. A 1956

DRYSELIUS, Harold
601 S. Gramercy Place
Los Angeles, Calif. A 1950

DUDEK, Mrs. Stephanie Z.
781 Beatty Ave. A 1949
Montreal 19, Que., Can.

DUE, Floyd O. (M.D.)
370 29th Street
Oakland 9, Calif. A 1943

DUNLAP, Dorothy
Agnew State Hospital
Agnew, Calif. A 1954

DUNN, Michael B. (Ph.D.)
Devereux Ranch
School A 1941
Santa Barbara, Calif. F 1943

•EARL, C. J. C. (F.R.C.P.I.)
2 Dale Drive
Stillorgan, County Dublin
Ireland F 1940

EGLASH, Mrs. Evelyn
College Heights
Chestertown, Md. A 1953

EHRENREICH, Gerald A.
751 E. 63rd St. (Ph.D.)
Kansas 10, Mo. A 1959

EIDUSON, Dr. Bernice T.
941 Stonehill Lane (Ph.D.)
Los Angeles 49, Calif. A 1949

EISNER, Betty G. (Ph.D.)
530 Gretna Green Way St. Aff.
Los Angeles 49, Calif. 1955

ELDRED, Donald M.
Psychology Department
Vermont State Hospital
Waterbury, Vt. A 1948

ELIZUR, Abraham (Ph.D.)
6 Tel Hai Street
Tel Aviv, Israel A 1949

ELLIOTT, Merle H. (Ph.D.)
1025 Second Avenue
Oakland 6, Calif. A 1944

ELLIS, Albert (Ph.D.)
Parc Vendome
333 W. 56th Street
New York 19, N. Y. A 1950

ENOCHS, Neil
366 Marie Avenue St.Aff. 1954
Los Angeles 42, Calif.

EPSTEIN, Hans L. (Ph.D.)
722 W. 176th Street
New York 33, N. Y. A 1944

ERICSON, Mrs. Helen
11844 E. Deana Street
El Monte, Calif. Aff. 1954

ERON, Leonard D. (Ph.D.)
Rip Van Winkle Foundation
454 Warren Street
Hudson, N. Y. F 1955

ESTRADA, Mrs. Carol Griffin
Departamento de psicologia
Facultad de Medicina
Popayan Colombia, SA A 1951

EVANS, John T. (Ph.D.)
85 Otis Street A 1951
Newtonville 60, Mass. F 1957

EVANS, Ray B.
4155 Jackson Avenue
Culver City, Calif. A 1954

EVERETT, Evalyn G. (Ph.D.)
Box 51
Imola, Calif. A 1953

EXNER, John E. Jr.
Bur. of Testing & Research
De Pauw University
Greencastle, Indiana A 1957

FABRIKANT, Benjamin (Ph.D.)
Psychological Service Center
765 Teaneck Road
Teaneck, New Jersey A 1959

FARBEROW, Norman L. (Ph.D.)
4211 Holly Knoll Drive
Los Angeles 27, Calif. A 1949

FATERSON, Hanna F.(Ph.D.)
1 Sheridan Square A 1943
New York 14, N.Y. F 1946

FEHRENBACH, Dr. Alice
3232 S. Josephine St.
Denver, Colo. A 1951

FEIFEL, Herman(Ph.D.)
VA Mental Hygiene Clinic
1031 S. Broadway A 1943
Los Angeles 15, Calif. F 1956

FEINBERG, Henry
15886 La Salle
Detroit, Mich. A 1949

FELDBERG, Theodore M.(M.D.)
11 E. Chase Street
Baltimore 2, Md. A 1944

FELDMAN, Dorothy A.(Ph.D.)
5225 Ellsworth Avenue
Pittsburgh 32, Pa. A 1952

FELDMAN, Irving(Ph.D.)
80 Poplar Ave.
W. Long Branch, N.J. A 1953

FELZER, Stanton B., (Ph.D.)
2014 North John
Russell Circle
Elkins Park 17, Pa. A 1954

FERGUSON, Kingsley G. (Ph.D.)
Psychology Department
Westminster Hospital
London, Ontario, Can. A 1954

FERRACUTI, Franco(M.D.)
Social Science Res. Center
Univ. of Puerto Rico A 1954
Rio Piedras, Puerto Rico

FEUERBURGH, Joseph (Ph.D.)
15 Stuyvesant Oval
New York 9, N.Y. A 1957

FICHMAN, Lionel L. (Ph.D.)
241 South Sepulveda Blvd.
St. Aff. 1954
Los Angeles 49, Calif. A 1957

FILMER-BENNETT, Gordon
Psychology Dept. (Ph.D.)
Univ. of Portland A 1954
Portland 3, Oregon F 1956

FINE, Harold J.(Ph.D.)
VA Mental Hygiene Clinic
355 Fairfield Avenue
Bridgeport, Conn. A 1955

FINE, Reuben(Ph.D.)
225 W. 86th Street A 1949
New York 24, N.Y. F 1954

FINN, Michael H. P.(Ph.D.)
7820 Ellenham Ave. A 1954
Ruxton, Maryland F 1958

FISCHER, Liselotte K.(Ph.D.)
219 Bryant Street
Buffalo, N.Y. A 1949

FLEMMING, Edward L.(Ed.D.)
10585 Lakeview Road East
Jacksonville 11, Fla. A 1954

FONT, Marion McKenzie
627 S. Carrollton Ave. A 1942
New Orleans 13, La. F 1947

FORER, Bertram R.(Ph.D.)
2170 Live Oak Drive E. A 1949
Los Angeles 28, Calif. F 1951

FORER, Lucille K.(Ph.D.)
2170 Live Oak Drive E.
Los Angeles 28, Calif. A 1953

FORREST, Dr. Carol W.
c/o Mead Carney
Wiednerhauptstr 52
Vienna IV, Austria A 1951

FORTIER, Robert H. (Ph.D.)
VA Hospital
Buffalo, N.Y. A 1956

*FOSBERG, Irving A.(Ph.D.)
7831 Plum St. A 1940
New Orleans 10, La. F 1949

FOSTER, Austin(Ph.D.)
The Psychopathic Hospital
University of Texas
Medical Branch A 1950
Galveston, Texas F 1955

FRAMO, James L., Jr.(Ph.D.)
Eastern Penna. Psych. Inst.
Henry Ave. &
Abbottsford Rd. A 1955
Philadelphia 29, Pa. F 1957

FRANCOEUR, Thomas A.
1070 Crevier Avenue (Ph.D.)
Ville St. Laurent
Prov. Que., Canada Aff. 1954

FRANK, Lawrence K.
25 Clark Street
Belmont, Mass. H.M. 1954

FRANKEL, Esther B.(Ph.D.)
Child Guidance Clinic
Children's Hospital
420-22 Cherry Street
San Francisco 18, Cal. A 1953

FREAR, Edgar
Montrose, Pa. A 1950

FRESCHI, Vincent J. (Ph.D.)
14 Penn Lane
West Chester, Pa. A 1960

FREY, Mrs. Harriet K.
59 Francisco Avenue
West Caldwell, N. J. A 1953

FRIEDMAN, Mrs. Gladys Miller
29575 So. Woodland Blvd.
Pepper Pike 24, Ohio A 1949

FRIEDMAN, Howard(Ph.D.)
316 Southfield Drive
Fayetteville, N. Y. A 1951

FRIEDMAN, Ira(Ph.D.)
29575 So. Woodland Blvd.
A 1954
Pepper Pike 24, Ohio F 1958

FRIEND, Mrs. Jeannette G.
16 Greenough Circle
Brookline 46, Mass. A 1949

FRISCH, Paul Z. (Ph.D.)
Psychology Department
Adelphi College
Garden City, N.Y. F 1956

*FROMM, Erika O.(Ph.D.)
5717 S. Kenwood
Chicago 37, Ill. A 1940

FROSTIG, Marianne (Ph.D.)
7257 Melrose Ave.
Los Angeles 46, Calif. A 1956

FRY, Franklyn D.
1724 Wyoming Avenue
Forty Fort
Wilkes-Barre, Pa. A 1952

FRY, Mrs. Martha O.
1724 Wyoming Avenue
Forty Fort
Wilkes-Barre, Pa. A 1952

FUCHSMAN, Seymour H.
140 E. 40th St.
New York 16, N.Y. A 1944

GALLICO, Mrs. Margaret Wilson
Univ. of Dayton
Dayton 9, Ohio A 1957

GARFIELD, S. L. (Ph.D.)
Nebraska Psychiatric Inst.
602 South 44th Ave.
Omaha, Neb. A 1959

GASOREK, Miss Kathryn
29 West Henry St.
Linden, New Jersey A 1949

GASTON, Charles O.
University of Texas
Medical Branch St. Aff. 1955
Galveston, Texas A 1957

*GAUDET, E. Louise(Ph.D.)
210 E. 53rd St.,
New York 22, N.Y. F 1940

GAUDET, Frederick J.(Ph.D.)
210 E. 53rd St., A 1949
New York 22, N.Y. F 1958

GAVIRIA, Alvaro Villar, M.D.
Cra. 12 No. 20-69
Bogota, Colombia A 1957

GEIL, George A.
915 Kings Avenue
Springfield, Mo. A 1943

*GERING, Mrs. Evelyn E.
18100 Karen Drive
Tarzana, Calif . A 1940

GERSTEN, Rev. Charles
Via Coeli Monastery, (Ph.D.)
Jemez Springs, N.M. A 1949

GETOFF, Louis
317 West 90th St.
New York 24, N.Y. A 1956

GIBSON, Robert L. (Ph.D.)
205 Riverside Drive
Tarpon Springs, Fla. A 1960

GILBERT, Raymond R.
32 Halifax Street
Boston 30, Mass. A 1951

GILLMAN, Mrs. Etta C.
16 Stevenson Avenue
Hartsdale, N. Y. A 1944

GINANDES, Mrs. Janet
1150 Fifth Ave.
New York. N.Y. A 1957

GLADFELTER, John(Ph. D.)
Dept. of Psychiatry
Southwestern Medical School
Dallas, Texas A 1958

GLASS, Blanche (Ph.D.)
35 E. 85th St.
New York 28, N.Y. A 1955

GOLDBERGER, Leo
Research Center for
Mental Health
New York University
21 Washington Place
New York 3, N.Y. A 1956

GOLDBLOOM, Betty M.(Ph.D.)
5642 Darlington Rd.
Pittsburgh 17, Pa. A 1952

GOLDFARB, William(M.D.)
530 West End Avenue A 1941
New York 31, N.Y. F 1944

GOLDSTEIN, Dr. Fred J.
Los Angeles Psych. Services
8770 W. Whitworth Dr.
Los Angeles 35, Calif. A 1956

GONDOR, Mrs. Lily H.
320 East 57th Street A 1949
New York 22, N.Y. F 1952

GOODMAN, Morris(Ph.D.)
3 Wellington Road
Livingston, N. J. A 1953

GOODNICK, Benjamin (Ph.D.)
Administration Building
Parkway and 21st
Philadelphia 3, Pa. A 1956

GOOLISHIAN, Harold A.(Ph.D.)
1008 Camp Circle West A 1952
La Marque, Texas F 1957

GORDON, Thelma
307 W. 11th Street
New York 14, N.Y. A 1951

GOTTLIEB, Mrs. Sophie B.
225 W. 86th Street
New York 24, N.Y. A 1943

GRAHAM, Virginia T.(Ph.D.)
General Hospital, N-3
Cincinnati 29, Ohio A 1953

GRASSI, Joseph R.
Bowman-Gray School of Med.
Wake Forest College
Winston-Salem, N. C. A 1942

GRAVES, Winifred S.(Ph.D.)
4242 Cornelius Ave. A 1948
Indianapolis 8, Ind. F 1951

GRAVITZ, Melvin A. (Ph.D.)
908 Kenbrook Court
Silver Spring, Md. A 1956

GRAYSON, Harry M.
403 S. Bundy Dr.
Los Angeles, Calif. A 1951

GREENBERG, Nathan
5447 Jeanne Mance Street
Montreal, Que., Can. A 1959

GREENE, Janet S.(Ph.D.)
65 E. 76th Street
New York 21, N. Y. A 1953

GREENSTADT, William M.
35 E. 30th Street St. Aff. 1954
New York, N. Y. A 1955

GRIER, Mary E. (Ph.D.)
2243 Harcourt Drive
Cleveland 6, Ohio A 1956

GROFF, Marne L.(Ph.D.)
1003 Dreams Landing
Annapolis, Maryland A 1952

GROSSMAN, Mrs. Marc J.
16950 S. Woodland Road
Shaker Heights 20, O. A 1949

GROSSMAN, Searles A.(Ph.D.)
4004 Coleridge Road A 1951
Wilmington 2, Del. F 1954

GUERTIN, Wilson H.(Ph.D.)
VA Hospital A 1950
Knoxville, Iowa F 1953

GUINDON, Jeannine
39 Ouest Gouin Blvd.
Montreal, Que., Can. A 1951

GUIORA, A. Zeev (Ph.D.)
4 Pines Street
Rehovoth, Israel A 1957

GUNDLACH, Ralph(Ph.D.)
162 East 80th Street
New York 21, N. Y. A 1951

GUREVITZ, Saul(Ph.D.)
680 West End Avenue
New York 25, N. Y. A 1949

GURVICH, Mrs. Bernice M.
251 Willis Avenue
Hawthorne, N. Y. A 1950

GURVITZ, Milton S.(Ph.D.)
54 Gateway Dr. A 1948
Great Neck, N.Y. F 1951

GUY, William
Huron Valley Child Guidance Clinic
310 S. Huron St.
Ypsilanti, Mich. A 1953

HABER, Wm. B.(Dr.)
275 Central Park West
New York 24, N. Y. A 1953

*HALLOW, William C.(Ph.D.)
422 Chestnut St.
Lebanon, Pa. A 1940

*HALLOWELL, A. Irving(Ph.D.)
Box 14, Bennett Hall
Univ. of Pennsylvania A 1940
Philadelphia 4, Pa. F 1944

HALLOWELL, Dorothy K.
3318 Midvale Avenue (Ph.D.)
Philadelphia 29, Pa. A 1947

HALPERIN, Sidney L.(Ph.D.)
1710 Makiki St.
Apt. 1001, Oahuan Tower
Honolulu, Hawaii A 1949

HALPERN, Esther
189 A Bay State Rd.
Apt. 2A
Boston 15, Mass. St. Aff. 1954

HALPERN, Florence (Ph.D.)
University Hospital
303 E. 20th St.
New York City, N.Y. F 1959

HAMMER, Emanuel F.(Ph.D.)
685 West End Avenue A 1953
New York 25, N.Y. F 1959

HAND, Dr. Mary Ella
432 Hamilton Place
Ann Arbor, Mich. A 1948

HANDEL, Gerald
Social Research, Inc.
145 East Ohio Street
Chicago 11, Ill. A 1954

HANSEN, Irvin (Ph.D.)
Psychology Department
University of Portland
Portland, Oregon A 1960

HARLOW, Justin E. Jr.
308 Administration Bldg.
Univ. of Florida
Gainesville, Fla. F 1957

HARMES, John M.
240 Smyth Road
Manchester, N.H. A 1957

HARRIS, Albert J.(Ph.D.)
Educational Clinic
Queens College
Flushing, N. Y. A 1951

HARRIS, June (Ph.D.)
Bureau of Child Guidance
80 Lafayette St.
New York 13, N. Y. A 1941

HARRIS, Robert A.(Ph.D.)
Austen Riggs Center Inc.
Stockbridge, Mass. A 1954

HARRIS, Robert E.(Ph.D.)
The Langley Porter Clinic
University of California
Medical Center
San Francisco 22, Calif. A 1948

HARRIS, William W.
210 E. 181st Street
Bronx, N. Y. A 1949

*HARROWER, Molly R.(Ph.D.)
55 E. 86th Street
New York 28, N. Y. F 1940

HAWKINS, Mrs. Hermione
4604 Keswick Road
Baltimore 10, Md. A 1951

HAWORTH, Mary R. (Ph.D.)
Dept. of Psychology
Michigan State University
East Lansing, Mich A 1959

HAYS, Miss Berta
505 S. Harvard Blvd.
Los Angeles 5, Calif. A 1949

HEATH, Douglas (Ph.D.)
Psychology Dept.
Haverford College
Haverford, Pa. A 1956

HEBERT, Bernard
4368 Girovard
Montreal 28, Canada A 1955

HEISLER, Verda(Ph.D.)
2306 - 6th Avenue
San Diego, Calif. A 1951

HELLERSBERG, Elisabeth F.
641 Whitney Avenue (Ph.D.)
New Haven, Conn. A 1949

HEMMENDINGER, Larry
1026 Park Avenue (Ph.D.)
Bridgeport, Conn. A 1950

HENRY, William E.(Ph.D.)
5835 Kimbark Avenue A 1948
Chicago, Ill. F 1956

HERNESS, Mrs. Christina
Amherst H. Wilder Child Guidance Clinic
670 Marshall Avenue
St. Paul 4, Minn. A 1952

*HERTZ, Marguerite R.(Ph.D.)
2835 Drummond Road
Shaker Heights, Ohio F 1940

*HERTZMAN, Max(Ph.D.)
Dept. of Psychology
College of the
City of New York A 1940
140th and Convent Ave.
New York, New York F 1946

HIGGINSON, Gordon K. (Ph.D.)
6040 N. Montana A 1954
Portland, Ore. F 1959

*HILDEN, Arnold H.(Ph.D.)
628 Clark Avenue A 1940
Webster Groves 19, Mo. F 1943

HILKEVITCH, Rhea R.(Ph.D.)
1550 Oak Avenue
Evanston, Ill. A 1954

HILLSON, Joseph (Ph.D.)
Norfolk State Hospital
Norfolk, Neb. A 1956

HILTMANN, Hildegard, Dr.
Professor of Psychology
Univ. of Freiburg F 1957
Bertoldstrasse 17, Germany

HIMELSTEIN, Philip, (Ph.D.)
Dept. of Psych.
Univ. of Arkansas
Fayettesville, Ark. A 1956

HINDS, Edith A. (Ph.D.)
1239 Lincoln Place
Brooklyn, New York A 1960

*HIRNING, L. C.(M.D.)
R.F.D. #1
Katonah, N.Y. F 1940

HIRSCH, Mrs. Janet F.
67-49-C 192nd Street
Fresh Meadows 65, N.Y. A 1948

HOCH, Erasmus L.(Ph.D.)
5932 Anniston Road
Bethesda 14, Md. A 1954

HOCKER, Mrs. Margaret W.
220 Reily Street
Harrisburg, Pa. A 1951

HOLANCHOCK, George
Box 138
Claymont, Dela. A 1957

HOLMES, Frances B.(Ph.D.)
Whetstone Rd., R.D. 2
Harwinton, Conn. A 1950

HOLODNAK, Helen Barbara
31-38—36th Street
Astoria 3, L. I., N. Y. A 1949

HOLT, James M. (Ph.D.)
5554 Littlebow Road A 1956
Palos Verdes Estates, Calif.

HOLTZMAN, Wayne (Ph.D.)
Hogg Foundation
University of Texas
Austin, Texas F 1959

HOLZBERG, Jules D.(Ph.D.)
Box 351 A 1949
Middletown, Conn. F 1954

HOOKER, Mrs. Evelyn(Ph. D.)
400 S. Saltair Ave.
Los Angeles 49, Calif. F 1958

HORLICK, Reuben S.(Ph.D.)
3004 N. Stuart Street
Arlington 7, Va. A 1951

HORN, Daniel (Ph.D.)
521 West 57th St.
New York 19, N.Y. F 1959

HOSHINO, Akira
Department of Psychology
International Christian Univ.
Mitaka Tokyo, Japan A 1959

HOWARD, J. W.(Ph.D.)
Route 2
Rigaud, P.Q., Canada A 1954

HOWARD, Stephen J.
3601 Marcia Drive Aff. 1954
Los Angeles 26, Calif. A 1958

HOWLAND, Allan O.
Philadelphia Inst. for Alcoholism & Narcotics Addiction
915 Corinthian Ave.
Philadelphia, Pa. A 1951

HUBER, Jack T.(Ph.D.)
310 East 55th St.
New York 22, N.Y. F 1958

HUGHES, Robert M.(Ph.D.)
Suite 101
849 Peachtree St., N.E. A 1944
Atlanta 8, Ga. F 1954

HUTT, Max L.(Ph.D.)
Department of Psychology
University of Michigan A 1947
Ann Arbor, Mich. F 1952

IMRE, Paul
Spring Grove State Hospital
Catonsville 28, Md. A 1954

INMAN, John M.
160 Tamalpais Road
Berkeley 8, Calif. A 1945

ISAACS, Mark
Springfield State Hospital
Sykesville, Maryland A 1959

IVERSON, Norman E. (Ph.D.)
North Central Medical Bldg.
2021 North Central Ave.,
Phoenix, Ariz. A 1956

IVES, Margaret(Ph.D.)
St. Elizabeths Hospital A 1953
Washington 20, D.C. F 1955

JACOBS, Martin E.(Ph.D.)
165 No. Village Ave.
Rockville Center, N.Y. A 1955

JAHODA, Hedwig(Ph.D.)
500 W. 235th Street
New York 63, N. Y. A 1952

JEFFREYS, Alvis W., Jr.(Ph.D.)
Western State Hospital
Staunton, Va. A 1952

JEFFRIES, Mrs. Helen
14 East Sixth Street
Media, Pa. A 1956

JOEL, Walther(Ph.D.)
9629 Brighton Way A 1946
Beverly Hills, Calif. F 1950

JOHNSON, Elizabeth Z.
VA Hospital (Ed.D.)
Lexington, Ky. F 1956

JOHNSON, Richard B.
124th St. & 101st Ave. A 1953
Richmond Hill 19, N.Y.

JOHNSON, Theresa
229 S. Maple Drive
Beverly Hills, Calif. A 1949

JOHNSON, Thomas F. (Dr.)
4412 Concord Dr.
Trevose, Pa. A 1957

JORTNER, Sidney
1425 Brooklyn Avenue
Brooklyn 10, N.Y. A 1959

JOSEPH, Alice(M.D.)
114 E. 71st St.
New York 21, N.Y. A 1944

*JUNKEN, Elizabeth M.(Ph.D.)
468 Lydecker Street
Englewood, N. J. A 1940

KADINSKY, D.
8 P. Smolenski Street
Tel Aviv, Israel A 1946

KADIS, Mrs. Asya L.
1060 Park Avenue
New York 28, N. Y. A 1944

KAHN, David F.(Ph.D.)
Lexington School for Deaf
904 Lexington Avenue
New York 21, N. Y. A 1953

KAHN, Marvin W. (Ph.D.)
University of Colorado
Medical School
4200 E. 9th Avenue A 1956
Denver, Colo. F 1959

KAHN, Maj. Theodore C.(Ph.D.)
Chief Psychologist
USAF Hospital
APO 633 c/o P.M. A 1953
New York, N.Y. F 1954

KALINKOWITZ, Bernard N. (Ph.D.)
Graduate School of
Arts and Science
New York University
Washington Square
New York, N. Y. A 1954

KALIS, Betty Lee (Ph.D.)
98 Levant St.
San Francisco 14, Calif. A 1956

KAPIT, Milton E.
1 W. 85th Street
New York 21, N. Y. A 1950

KAPLIN, Bert(Ph. D.)
Dept. of Psychology
Univ. of Kansas
Lawrence, Kansas A 1958

KAPLAN,Herbert
Patricia Avenue
Fishkill, N. Y. A 1949

KAPLAN, Norman(Ph.D.)
302 W. 35th St.
Savannah, Ga. A 1949

KARSON, Samuel (Ph.D.)
Dade County Child Guidance
Clinic
1350 N.W. 14th St.
Miami, Florida F 1957

KASS, Walter(Ph.D.)
4 Farley Road
Scarsdale, New York F 1955

KATAGUCHI, Yasufumi
Natl. Inst. of Mental Health
Kohadai Ichikawa,
Chiba, Japan A 1958

KATES, Solis L.(Ph.D.)
University of Massachusetts
Amherst, Mass. A 1949

KATZ, Mrs. Florine
67 East 82nd Street
New York 28, N.Y. A 1953

KATZ, Mrs. Harriet
516 East Maryland Avenue
Phoenix, Arizona A 1950

KAUFMANN, Elizabeth M.
414 W. 121st Street
New York 27, N. Y. A 1950

KAVKEWITZ, Henry(Ph.D.)
1060 Union Street
Brooklyn 25, N. Y. A 1955

KELSEY, Howard Phelps
1252 Fourth Street
Sarasota, Fla. A 1944

*KEMPLE, Camilla
20 W. 86th Street A 1940
New York 24, N.Y. F 1946

KENDIG, Isabelle V.(Ph.D.)
Ashton, Md. A 1944 F 1946

KESSLER, Mabel G.(Ph.D.)
Montgomery County
Public Schools
Court House
Norristown, Pa. A 1952

KEW, Clifton E.
32 Gramercy Park So.
New York 3, N.Y. A 1949

KIDORF, Irwin W.(Ph.D.)
VA Hospital
Coatsville, Pa. A 1959

KING, Francis W.(Ph.D.)
4 Kingsford Road
Hanover, N. Hampshire A 1952

KINGSLEY, Dr. Leonard
1825 E. Patton Drive
Meade Heights
Ft. Meade, Md. A 1957

KIRK, Virginia(Ph.D.)
Vanderbilt University
School of Medicine
Nashville 5, Tenn. A 1944

KISSINGER, R. David
84 Fairview Place
Sea Cliff, N.Y. St. Aff. 1960

KITAY, Philip M.(Ph.D.)
8707–35th Avenue A 1955
Jackson Heights 72, N. Y.

KLASS, Walter K.(Ph.D.)
North Central College
146 N. Sleight Street
Naperville, Ill. A 1946

KLATSKIN, Ethelyn H.(Ph.D.)
Dept. of Pediatrics
4084 LMP
333 Cedar St. A 1946
New Haven 11, Conn. F 1955

KLEBAN, Morton H.
Nebraska Psychiatric Inst.
603 So. 44th Ave.
Omaha 5, Neb. St. Aff. 1959

KLEIN, Abraham(Ph. D.)
433 W. 21st Street
New York 11, N. Y. A 1955

KLEIN, Mrs. Beatrice
Woodstock, N.Y. A 1946

*KLEIN, Eva L.(M.D.)
1148 Fifth Avenue
New York 28, N. Y. A 1940

KLEIN, Louis S.
28894 Morlock
Livania, Michigan A 1959

KLEINBERG, Mrs. Rosalyn K.
6606 N. 11th St.
Philadelphia 26, Pa. A 1950

*KLOPFER, Bruno(Ph.D.)
Box 2971
Carmel, Calif. F 1940

KLOPFER, Walter G.(Ph.D.)
Dept. of Psychology
Univ. of Portland A 1946
Portland, Oregon F 1951

KNAPP, Pearl G. (Ph.D.)
Dept. of Psychiatry
Cedars of Lebanon Hosp.
4833 Fountain Avenue
Los Angeles 29, Calif. F 1956

KORDA, Mrs. Geraldine J.
1030 Prospect Blvd.
Pasadena, Calif. A 1949

KORNER, Anneliese F.(Ph.D.)
Mt. Zion Psychiatric Clinic
A 1950
San Francisco 15, Calif. F 1953

KORNREICH, Melvin(Ph.D.)
8 Kay Ave.
Jericho, L.I., N.Y. A 1951

KORNRICH, Milton
67-29B Springfield Blvd.
Bayside 64, N.Y. St. Aff. 1958

KOTKOV, Benjamin(Ph.D.)
8 Orchard Street
West Brattleboro, Vt. A 1949

KOVNAR, Murray(Ph. D.),
Director Psychology Dept.
State Hospital
Jamestown, N. Dakota

*KRAFFT, Mrs. Margaret R.
27 West 96th Street, Apt. 4C
New York 25, N.Y. A 1940

KRAL, V. Adalbert(M.D.)
4145 Blueridge Crescent
Montreal, Que., Can. A 1953

KRAMISH, Art A. (Dr.)
Chief, Psychology Service
V.A. Hospital
Knoxville, Iowa A 1957

KRASNER, Leonard(Ph.D.)
VA Hospital
Palo Alto, Calif. A 1952

KROUT, Maurice H.(Ph.D.)
1938 Cleveland
Evanston, Ill. A 1950

KRUGMAN, Dorothy C.(Ph.D.)
425 Riverside Drive
New York 25, N. Y. A 1944

KRUGMAN, Herbert E. (Ph.D.)
425 Riverside Drive
New York 25, N. Y. A 1943

KRUGMAN, Judith I. (Ph.D.)
P.O. Box 43
Tomkins Cove, N.Y. A 1941

•KRUGMAN, Morris (Ph.D.)
P.O. Box 43
Tomkins Cove, N.Y. F 1940

KUSHNER, Malcolm (Ph.D.)
8460 S.W. 185th Terrace
Miami 37, Fla. A 1956

KUTASH, Samuel B. (Ph.D.)
3 Park Road A 1950
Maplewood, N. J. F 1951

LAKIN, Harriet A.
1959 S. Crescent Heights
Los Angeles 34, Calif. A 1950

LAMPL, Henry M.
266 Washington Ave.
Kingston, N.Y. A 1955

LANDIS, Bernard
276 Riverside Drive
New York 25, N.Y.
St. Aff. 1959

LANDISBERG, Selma
166 East 35th St.
New York 16, N.Y. A 1950

LASAGA, Jose I. (Dr.)
Calle 9, No. 407
Vedado, Habana, Cuba A 1957

LASKOWITZ, David
3856 Bronx Blvd.
Bronx 67, N.Y. A 1953

LAWRENCE, Ernest S. (Ph.D.)
240 S. La Cienega Blvd.
Beverly Hills, Calif. A 1955

LAWRENCE, James F. (Ph.D.)
Area Medical Office
V.A. 30 Cornhill A 1949
Boston, Mass. F 1954

LAWRENSON, Thomas J.
13-D Yale Street
Nutley, N. J. A 1955

LAZOVIK, David A. (Ph.D.)
University of Pittsburgh
Pittsburgh 13, Pa. F 1959

LEBEAUX, Mrs. Thelma W.
106 Newton Avenue N.
Worcester 9, Mass. A 1944

LEBOWITZ, Mrs. Anne
13746 Magnolia Boulevard
Van Nuys, Calif. St. Aff. 1956

LEDER, Ruth
301 E. 21st Street
New York 10, N. Y. A 1950

LEDWITH, Nettie H. (Ph.D.)
Pittsburgh Child Guid. Center
201 DeSoto Street A 1948
Pittsburgh 13, Pa. F 1952

LEE, Dorothy B.
33-33 82nd Street A 1950
Jackson Heights 72, N. Y.

LEHMANN, Heinz E. (M.D.)
Verdun Protestant Hospital
Box 6034 A 1943
Montreal, Que., Can. F 1951

LEHRER, Ruth (Ph.D.)
Kansas Treatment Center
for Children
Third and Oakley Sts. A 1944
Topeka, Kans. F 1954

LEIDEN, Irving (Ph.D.)
750 Green Bay Rd.
Winnetka, Ill. A 1956

LEONARD, A. T.
1067 Pine St.
Muskegan, Mich. A 1954

LEOPOLD, Julius
69-53 185th St.
Flushing 65, N.Y. St. Aff. 1953

LEPSON, David S. (Ph.D.)
1701 Parkline Dr.
Pittsburgh 27, Pa. A 1958

LESSER, Erwin (Dr.)
University Guidance Center
University of Miami
Coral Gables 46, Fla. A 1958

LEVENSTEIN, Mrs. Phyllis
3268 Island Rd.
Wantagh, L. I., N. Y. A 1948

LEVEY, Archie
Ste. 33, Communits Apts.
Saskatoon,
Saskatchewan, Can. A 1956

LEVI, Joseph (Ph.D.)
50 W. 72nd Street A 1947
New York 23, N. Y. F 1954

LEVINE, Abraham (Ph.D.)
263-45 74th Ave.
Glen Oaks, N.Y. A 1952

LEVINE, David (Ph.D.)
Department of Psychology
University of Nebraska
Lincoln, Nebraska F 1960

LEVINE, Harold A. (Ph. D.)
42 Deepdale Parkway
Roslyn Heights, L.I., N.Y.
F 1959

LEVINGER, Leah
131 Jorelemon St.
Brooklyn 1, N. Y. A 1952

LEVINSON, Boris M. (Ph.D.)
39-25 47th Street A 1952
Sunnyside, L. I. C. 4,
N.Y. F 1956

LEVINSON, Mrs. Toby
232 Glenholme Ave.
Toronto, Canada A 1960

LEVIT, Herbert I. (Ph.D.)
Dixmont State Hospital
Glenfield, Pa. A 1954

LEVY, Henry Louis
11959 Nebraska Ave.
Los Angeles 25, Calif. A 1960

LEVY, Ruth Jacobs (Ph.D.)
14430 Union Avenue
Cambrian Park A 1948
San Jose, Calif. F 1951

LEVY, Sidney J. (Ph.D.)
7417 S. Oglesby Avenue
Chicago 49, Ill. A 1956

LEWIS, Robert T. (Ph.D.)
2220 South Third Ave.
Arcadia, Calif. A 1953

LEWISOHN, Peter M. (Ph. D.)
Carter Memorial Hospital
1315 West Tenth St.
Indianapolis 7, Ind A 1958

LIBRESCO, Emile
R.D. 1, Box 14
Pound Ridge, N. Y. A 1952

LIEBEN, Mrs. Beatrice
285 Fountain Road
Englewood, N. J. A 1953

LIEBERMAN, Mrs. Janet Chase
1136 Fifth Ave.
New York 28, N.Y. A 1956

LINDZEY, Gardner (Ph.D.)
Dept. of Psychology
University of Minnesota
Minneapolis, Minn. F 1959

LIT, Jack (Ph.D.)
1172 E. Slocum
Philadelphia, Pa. A 1956

LITTLE, Jack F. (Ph.D.)
8073 Earl Street
Oakland 5, Calif. A 1949

LITTLE, Kenneth B. (Ph.D.)
Training and
Standards Branch
National Inst. of
Mental Health
Bethesda, Maryland F 1959

LIUTKUS, Dr. Stanley
Staff House, Apt. 1
Greystone Park, N.J. A 1959

LOCKWOOD, Wallace V. (Ph.D.)
2552 Fifth Ave.
San Diego 3, Calif. A 1949

LOEHRKE, Leah M. (Ph.D.)
Veterans Administration
12227 Clifton Blvd.
Lakewood, Ohio A 1954

LOLIS, Kathleen
Bureau of Child Guidance
362 Schermerhorn St.
Brooklyn 17, N.Y. A 1949

LONGLEY, James L.
Industrial Psychology Division
The Detroit Edison Company
2000 Second Avenue
Detroit 26, Mich. A 1953

LONSTEIN, Murray (Ph.D.)
Chief Psychologist VA Hosp.
Leach Farm Road
Pittsburgh 6, Pa. A 1953

•LOPES, Jose Leme (M.D.)
Rua Martins Ferreira 75
Rio de Janeiro, Brazil F 1940

LOW, Howard (Ph. D.)
Dept. of Psychiatry
Div. of Psychology
State Univ. of Iowa
Iowa City, Iowa A 1954

LUCAS, Winafred B. (Ph.D.)
1019 Gayley Ave.
Los Angeles 24, Calif. A 1951

LUNDIN, William (Ph.D.)
60 E. Scott St.
Chicago 10, Ill. A 1954

MacBRIDE, John I.
23740 Maude Lea Circle
Novi, Michigan A 1955

MacCASLAND, Mrs. Barbara W.
Marcy State Hospital
Marcy, N.Y. A 1957

MacGREGOR, Dr. Robert
Univ. of Tex., Med. Branch
Galveston, Tex. A 1958

MAGNETTE, Jules (M.D.)
Nevada State Hospital
Reno, Nevada A 1956

MAHRER, Alvin R. (Ph.D.)
1315 S. Grape St.
Denver 22, Colo. A 1955

MAITI, Prof. Haripada P.
Director, B.M. Institute
of Psychology and Child
Development
Nr. Town-Hall, Ellis Bridge
Ahmedabad 6, India A 1952

MALLOY, Mrs. Helga
35 Church Hill, A 1943
Westmount, Montreal, Can.

MALM, Mrs. Mildred
11423 E. Hallwood Drive
El Monte, Calif. A 1949

•MANN, Mrs. Edna B.
215 W. 98th Street
New York 25, N. Y. F 1940

MANSON, Morse P. (Ph.D.)
10644 Wilshire Blvd.
Los Angeles 24, Calif. A 1950

MANUGE, Mrs. Robt. W. M.
5077 Victoria Avenue
Montreal 29, P.Q. A 1956

MARGOLIS, Mrs. Muriel F.
55 Fern Drive
East Hills
Roslyn, L.I., N.Y. A 1949

MARIANI, Eugene L. (Ph.D.)
1120 22nd Ave. No.
St. Cloud, Minnesota A 1958

MARIANI, Rose (Ph.D.)
1120 22nd Ave. No.
St. Cloud, Minnesota A 1958

**MARKER, Mrs. Beatrice W.**
2131 Delancey Place
Philadelphia 3, Pa. A 1951

**MARKHAM, Mrs. Sylvia**
116 E. 68th Street
New York 21, N. Y. A 1954

**MARSH, Donald D. (Ed.D.)**
595 E. Colorado Street
Pasadena, Calif. A 1956

**MARSH, James T. (Ph.D.)**
Department of Psychiatry
University of California
Medical School
Los Angeles 24, Calif. A 1955

**MARTIN, Harry J., Jr. (Ph.D.)**
254 Leggett Drive
Abilene, Tex. A 1957

**MARX, Alfred**
Children's Treatment Service
Central State Hospital
Norman, Okla. A 1956

**MATHER, Elise D.**
5260 W. Chicago
Detroit 4, Mich. A 1948

**MATHEWS, W. Mason (Ph.D.)**
Merrill-Palmer School
71 Ferry Avenue, E.
Detroit 2, Mich. A 1949 F 1955

**MATHIAS, Rudolf (Ph.D.)**
5150 Juneau Road
Madison 5, Wisc. A 1950

**MAYMAN, Martin (Ph.D.)**
Menninger Foundation
Topeka, Kansas F 1956

***McBRIDE, Katharine E. (Ph.D.)**
Bryn Mawr College
Bryn Mawr, Pa. A 1940

**McCARY, James Leslie (Ph.D.)**
5101 Almeda at
Southmore A 1948
Houston, Texas F 1956

**McCLOSKEY, Mrs. E.**
5832 Corral Way
La Jolla, Calif. A 1948

**McCULLY, Robert**
Payne Whitney Clinic
525 E. 68th St.
New York 21, N.Y. A 1959

**McDONALD, Franklin R.**
3700 Cherrywood Ave. (Ph.D.)
Los Angeles 18, Calif. A 1952

**McFARLAND, Robert L. (Ph.D.)**
VA Research Hospital
333 E. Huron Street
Chicago 11, Ill. F 1956

**McGEE, Mrs. B. F.**
Psychology Dept.
Allentown State Hospital
Allentown, Pa. A 1959

**McGREEVEY, James (Ph.D.)**
University of Portland
Portland 3, Oregon A 1960

**McNEILL, Harry V. (Ph.D.)**
U.S.P.H.S. A 1950
42 Broadway F 1951
New York 4, New York

**McPHERSON, Marion W.**
844 W. Lovell St. (Ph. D.)
Kalamazoo, Michigan A 1953

**MEHR, Helen Margulies (Ph.D.)**
2264 Fairhill Lane A 1941
San Jose, Calif. F 1949

**MENDENHALL, John H.**
5555 Hickam Drive
Dayton 31, Ohio A 1958

**MERCER, Margaret (Ph.D.)**
St. Elizabeths Hospital A 1946
Washington, D.C. F 1950

**MEYER, George (Ph.D.)**
2479 16th Avenue
San Francisco, Calif. A 1950

***MEYER, Mortimer M. (Ph.D.)**
503 N. Bronson Avenue A 1940
Los Angeles 4, Calif. F 1949

***MIALE, Dr. Florence R.**
225 West 86th Street
New York, N. Y. F 1940

**MICHAEL, Carmen Miller**
6223 Lupton A 1951
Dallas 25, Texas F 1955

**MICHAL-SMITH, Harold**
1230 Park Avenue (Ph.D.)
New York 28, N. Y. F 1955

**MILLER, Cecil R.**
10857 Wellworth Ave.
Los Angeles St. Affi. 1953
California A 1955

**MILLER, Christine (Ph.D.)**
973 Keeler Avenue
Berkeley 8, Calif. A 1955

**MILSTEIN, Dr. A. Freda**
17558 Prest
Detroit 35, Mich. A 1946

**MIMS, Mrs. Jean Giesey**
1110 E. 32nd Street
Austin, Texas A 1943

**MINDESS, Harvey (Ph.D.)**
1473 Wooster St.
Los Angeles 35, Calif. A 1953

**MINDLIN, Mrs. Dorothee F.**
6408 Bannockburn Dr.
Bethesda 14, Md. A 1955

**MOLISH, Dr. Herman B.**
Medical Res. Lab. Bos. 100
U. S. Sub Base
New London, Conn. A 1950

**MOORE, Mrs. Harriet Bruce**
145 E. Ohio Street
Chicago 11, Ill. A 1953

**MORELAND, Mrs. Margaret E.**
Kirkwood Drive
Grand Island, N. Y. A 1950

**MORF, Gustav (M.D.) (Ph.D.)**
1410 Fayolle Avenue
Montreal 19, Quebec
Canada A 1954

**MORGAN, Clellen L. (Ph.D.)**
R.D. No. 29, Beatty Road
Media, Pa. A 1950

**MORGAN, Olive J. (Ph.D.)**
R.D. No. 29, Beatty Road
Media, Pa. A 1950

**MORIZE, Mrs. Andre**
4, Rue Jean-du-Bellay
Paris 4°, France A 1945

**MOROSON, Mrs. Gloria**
110-21 73rd Road
Forest Hills, L.I., N.Y. A 1958

**MORRIS, Charles M. (Ph.D.)**
73 North Second St.
Easton, Pa. A 1956

**MORRISON, Alfonso**
1412 Marshall
Houston 6, Texas St. Aff. 1956

**MORROW, J. Lloyd (M.D.)**
197 Passaic Avenue
Passaic, N. J. A 1943

**MOTZ, Dr. Gerald**
1604 Holbrook
Ponca City, Oklahoma A 1954

**MUELLER, Adolph R. (M.D.)**
1220 Washington Street
Leavenworth, Kans. A 1943

**MUENCH, George (Ph.D.)**
San Jose State College
San Jose, Calif. A 1946

**MULLEN, Esther (Ph.D.)**
10 Downing Street
New York 14, N. Y. A 1950

***MUNROE, Ruth L. (Ph.D.)**
239 Central Park West
New York 24, N. Y. F 1940

**MUNZ, Adam**
67-30 Clyde Street
Forest Hills, L. I., N. Y. A 1955

**MURPHY, Rev. Kenneth**
26 S. Center Street
Springfield, Ohio Aff. 1954

**MURPHY, Lois Barclay (Ph.D.)**
Menninger Foundation
Topeka, Kans. A 1941

**MURRAY, David (Dr.)**
489 N. East Avenue
Mississippi City, Miss. A 1958

**MURRAY, Henry (M.D.)**
7 Divinity Avenue A 1948
Cambridge 38, Mass. F 1950

**MURSTEIN, Dr. Bernard I.**
Dept. of Psychology
Univ. of Portland A 1957
Portland 3, Oregon F 1959

**NAPOLI, Peter J. (Ed.D.)**
West Shore Rd., RFD 2
Putman Valley, N.Y. A 1949

**NEUMAN, Gerard G. (Ph.D.)**
2925 Arrowood Trail
Deerfield, Illinois A 1955

**NEWMAN, Joseph (Ph.D.)**
University Drive
Pittsburgh 40, Pa. A 1950

**NICHOLAS, Alma L.**
200 Retreat Avenue
Hartford 2, Conn. A 1954

**NORTHCOTT, Hollie**
1452 Willard St.
San Francisco 17, Calif. A 1954

**NOSAL, Walter S. (Ed.D.)**
John Carrol University
Cleveland 18, Ohio A 1954

**NUNEZ, Rafael (Ph.D.)**
Facultad de Filosofia
y letras, Univ. Nacional
Autonoma de Mexico
Ciudad Universitaria A 1954
Mexico 20, D.F., Mexico
F 1958

**NUTT, Frances D.**
Dept. of Psych.
Michigan State Univ.
East Lansing, Mich. A 1958

**OCHROCH, Ruth (Dr.)**
656 W. 162nd Street
New York 32, N. Y. A 1950

**ODOM, Charles L. (Ph.D.)**
404 Carondelet Bldg.
New Orleans 12, La. A 1949

**OLIN, Tom Davis**
39 Jackson Road
Bloomfield 11, Conn. A 1956

**OLINGER, Leonard Bennett**
9952 Santa Monica Blvd. (Ph.D.)
Beverly Hills, Calif. A 1954

**O'REILLY, P. Oliver, (M.B., B.Ch.)**
Dir., Psychiatric Dept.
Union Hospital
Moose Jaw
Saskatchewan, Can. A 1957

**ORGEL, Sidney A. (Ph.D.)**
205 Crawford Ave.
Syracuse 3, New York A 1952

**ORR, David Hamilton (Ph.D.)**
Psychological Services
Allentown State Hospital
Allentown, Pa. F 1956

**OSSORIO, Abel Garcia (Ph.D.)**
Department of Psychology
Washington University
St. Louis, Mo. A 1951

**PAINTING, Donald H. (Ph.D.)**
Anclote Manor
Tarpon Springs, Fla. A 1960

**PALM, Rose (Ph.D.)**
263 West End Avenue
New York 23, N. Y. F 1955

PAOLINO, Albert (Dr.)
12004 Paul Ave.
Cleveland 6, Ohio A 1958

PARKER, Rolland S.
30 A Joralemon St.
Brooklyn 2, New York A 1957

PARNICKY, Dr. Joseph J.
Edw. R. Johnstone Training and Research Center
Brodentown, N.J. A 1949

PARSONS, Rosa F.
2838 Eagle Street
San Diego 1, Calif. A 1947

PAUL, Waters C.
Psychology Dept. Boyce Hosp. Station 3
Tuscaloosa, Ala. A 1956

*PAULSEN, Alma A. (Ph.D.)
433 W. 21st Street
New York 11, N. Y. F 1940

PAYNE, David H., M.A.D.O.
8345 Talbert Avenue A 1950
Huntington Beach, Calif.

PEAK, Horace M.
Box 52,
Patton State Hospital,
Patton, Calif. A 1949

PECK, Miss Rosalind
317 E. 24th St.
New York 10, N.Y. A 1958

PECKARSKY, Adeline (Ph.D.)
67 Parker Ave.
Maplewood, N.J. A 1958

PEIXOTTO, Helen E. (Ph.D.)
Child Center
Catholic University of America
Washington, D.C. F 1955

PENA, Cesareo D. (Ph.D.)
Mental Health Institute
Box 111
Independence, Iowa A 1951

PESETSKY, Fred J.
Box 1131 Station B
Nashville 5, Tenn. St. Aff. 1957

PETERS, Marie Wilson
6144 Wayne Avenue A 1947
Philadelphia 44, Pa. F 1951

PEYMAN, Douglas A. R.
Psychology Department (Ph.D.)
Alabama State Hospital
Tuscaloosa, Ala. F 1956

PHILLIPS, Mrs. Allvertta B.
153 Fall Creek Parkway
Indianapolis 2, Ind. A 1950

PHILLIPS, John (Ph.D.)
4 Andrews Road
Malvern, Pa. A 1959

*PIOTROWSKI, Zygmunt A.
Jefferson Medical College
1025 Walnut St.
Philadelphia 7, Pa. F 1940

PLATT, Henry (Ph.D.)
Devereux Schools
Devon, Pa. A 1950

PLITTMAN, Jack C.
Psychology Department
Patton State Hospital
San Bernardino, Calif. A 1951

POPPLESTONE, John
Western Michigan Univ.
Box 243
Kalamazoo, Michigan A 1958

PORTER, Mrs. Lucille S.
250 First Avenue
New York 9, N. Y. St. Aff. 1953

POSER, Ernest George (Ph.D.)
Department of Psychology
McGill University
3600 McTavish Street A 1950
Montreal, P.Q., Canada F 1953

POTTHARST, Karl E. (Ph.D.)
4911 Van Nuys Blvd.
Suite 306
Sherman Oaks, Calif. F 1957

PRICE, Mrs. Marian Blewitt
854 S. Euclid
Pasadena 5, Calif. A 1953

PROCTOR, Paul W. (Ph.D.)
315 W. 106th Street
New York 25, N. Y. A 1951

PUZZO, Frank S.
150-52 232nd Street
Laurelton, N. Y. A 1949

RABIN, Albert I. (Ph.D.)
Department of Psychology
Michigan State University
East Lansing, Mich. F 1955

RADER, Dr. Gordon E.
Psychology Section
Department of Psychiatry
North Carolina
Memorial Hospital
Chapel Hill, N.C. A 1956

RADTKE, William L.
Manatee Junior College
Bradenton, Florida A 1954

RAIFMAN, Irving (Ph.D.)
3102 Woodhollow Drive
Chevy Chase, Maryland

RAINWATER, Lee (Ph.D.)
145 East Ohio Street
Chicago 11, Ill. A 1956

*RAPAPORT, David (Ph.D.)
Austen Riggs Center
Stockbridge, Mass. F 1940

RAPKIN, Maurice (Ph.D.)
800 S. Robertson Blvd.
Los Angeles 35, Calif. A 1952

RAPPAPORT, Sheldon R. (Ph.D.)
290 Linden Lane A 1951
Merion, Pa. F 1956

RAPPAPORT, Sidney M. (Ph.D.)
1423 Mellon Road A 1949
Wyncote, Pa. F 1955

RAUB, Edwin S. (Ed.D.)
213 Midland Avenue
Wayne, Pa. A 1952

RECORD, Father Maurice A.
Dept. of Psychology
Assumption College of Windsor
Windsor, Ontario, Can. A 1954

REENS, Mrs. Renee G.
27 West 96th St.
New York 25, N.Y. A 1959

REICHARD, Suzanne (Ph.D.)
1075 Cragmont Avenue
Berkeley, Calif. A 1941

REICHENBERG-HACKETT, Wally (Ph.D.)
c/o Department of Psychology
College Station
Duke University
Durham, N. C. A 1948

REIS, Walter J. (Ph.D.) (M.D.)
Western Psychiatric Institute
3811 O'Hara Street
Pittsburgh 13, Pa. A 1943

REISEL, Jerome (Ph.D.)
4937 Nagle Avenue
Sherman Oaks, Calif. A 1955

REISS, William J. (Ph.D.)
VA Center
Kecoughtan, Va. A 1955

REITZ, Mrs. Edna Maisner
22414 Clarendon
Woodland Hills, Calif. A 1953

REITZELL, Mrs. Jeanne M.
500 S. Arroyo Boulevard
Pasadena 2, Calif. A 1949

RESWICK, Mrs. Serena W.
80 Winthrop Street
Brooklyn 25, N.Y. A 1950

RIBEIRO, Dr. Rene
Rua Henrique Dias 271
Recife
Pernambuco, Brazil A 1951

RICHARDS, T. W. (Ph.D.)
Dept. of Neuropsychiatry
Louisiana State University
School of Medicine A 1942
New Orleans 12, La. F 1954

*RICKERS-OVSIANKINA, M.
Univ. of Connecticut (Ph.D.)
Storrs, Conn. F 1940

RIDGE, Lt. Bradley B.
Head, Psychology Branch
Neuropsychiatric Service
U. S. Naval Hospital
Philadelphia, Pa. A 1958

RISCH, Frank (Ph.D.)
3097 Manning Avenue
Los Angeles 64, Calif. A 1949

*RITEY, Hector J. (M.D.)
815 Park Avenue
New York 21, N. Y. A 1940

RITZ, George H. Jr. (Ph.D.)
4070 Mayfield Road
Cleveland 21, Ohio A 1959

*RIVERS, Mrs. Hubert M.
111 Mitchell Drive
Pittsburgh 28, Pa. A 1940

ROA-CHE, Miriam Haines
2329 Hudson Terrace (Ph. D.)
Coytesville, N.J. A 1951

ROBINOWITZ, Ralph (Ph.D.)
Clinical Psychologist
VA Hospital
Waco, Texas A 1957

ROBINSON, Elizabeth Foster
Child Psychiatry Division
University Hospitals
Madison, Wisc. A 1954

ROCKBERGER, Harry (Ph.D.)
299 So. Harrison St.
East Orange, N. J. A 1954

RODAN, Mrs. Henrietta Itta
510 E. 85th Street
New York 28, N.Y. St. Aff. 1954

RODRIQUEZ-VALDERRAMA, Dr. Jose
Calle 71-#10-53
Bogota, D.E., Colombia

ROE, Anne (Ph.D.)
Graduate School of Education
Harvard University
Cambridge 38, Mass. F 1959

ROGERS, Lawrence S. (Ph.D.)
1046 Madison Street A 1949
Denver 6, Colo. F 1954

ROOK, Leroy H.
State Hospital No. 1
Fulton, Mo. A 1957

RORSCHACH, Mme. Olga
Hirschgartenweg H. M. 1954
Zurich 57, Switzerland

ROSE, Margaret E.
34 St. Marks Place
New York 3, N.Y.

ROSE, Nicholas
921 Westwood Blvd.
Los Angeles, Calif. A 1956

ROSEN, Esther Katz (Ph.D.)
1810 Rittenhouse Sq. A 1945
Philadelphia 3, Pa. F 1951

ROSENBERG, Israel H.
89-38 Whitney Avenue A 1953
Elmhurst 73, L. I., N. Y.

ROSENTHAL, Robert (Ph.D.)
2223 First Avenue, No. A 1957
Grand Forks, N.D. F 1959

ROSENTHAL, Vin (Ph.D.)
Dept. of Neurology
and Psychiatry
Northwestern University
Medical School
301 E. Chicago Avenue
Chicago 11, Ill. A 1956

ROSNER, Stanley (Ph.D.)
971 Fairfield Avenue
Bridgeport, Conn. A 1954

ROSS, Harvey (Ph.D.)
450 N. Bedford Drive
Beverly Hills, Calif. A 1956

ROSS, M. Eleanor (Ph.D.)
Montgomery County Mental
Health Clinic
Basin & Powell Streets A 1944
Norristown, Pa. F 1949

*ROSS, W. Donald (M.D.)
Department of Psychiatry
Cincinnati General Hospital
Cincinnati 29, Ohio F 1940

ROTHENBERG, Mrs. Eleanor
77 West 85th St.
New York 24, N.Y. A 1958

ROTMAN, Saul R. (Ph.D.)
Veterans Adm. Hospital
Sunmount, N. Y. A 1947

RUHL, Mrs. R. Ernest
817 Chestnut Street
Mifflinburg, Pa. A 1947

RUJA, David H. (Ph.D.)
435 No. Roxbury Drive
Beverly Hills, Calif. A 1949

RUSSELL, Howard
3680 Fairway Blvd.
Los Angeles 43, Calif. A 1954

*RYMER, Charles A. (M.D.)
230 Majestic Bldg.
Denver 2, Colo. F 1940

SABATH, Gerald
215 West 14th St.
New York 11, N.Y. A 1960

ST. CLAIR, Walter F. (Ed.D.)
999 Mammoth Road
Manchester, N. H. A 1943

SALTZMAN, Marguerite R.
2037 Spruce Street
Philadelphia 3, Pa. A 1950

SALTZMAN, Sara
7012 Wilson Lane
Bethesda 14, Md. A 1950

SALZMAN, Mrs. Anne
12548 Everglade Street
Los Angeles 66, Calif. A 1953

SANCHEZ-GARCIA, Dr. Jose
Casilla de Correos 57
Miraflores, Lima, Peru A 1959

SANDER, Emilie T.
657 W. 161st Street
New York, N.Y. A 1950

SANDERS, David H.
1479 Dahill Road
Brooklyn 4, N.Y. St. Aff. 1960

SANDERSON, Herbert (Ph.D.)
1823 34th Avenue
San Francisco 22, Calif. A 1952

SANFORD, Nevitt (Ph.D.)
Vassar College
Poughkeepsie, N.Y. F 1959

SARASON, Mrs. Esther K.
Institute of Human Relations
Yale University
333 Cedar Street
New Haven, Conn. A 1944

SARASON, Seymour B. (Ph.D.)
Institute of Human Relations
Yale University
333 Cedar Street
New Haven, Conn. A 1944

SARGENT, Helen D. (Ph.D.)
2025 Westwood Drive A 1945
Topeka, Kans. F 1950

SCALES, Margaret B. (Ph.D.)
50 King St.
New York 14, N.Y. A 1955

SCHACHT, Mrs. Leatrice Styrt
5 Avis Drive
New Rochelle, N. Y. A 1950

SCHACHTEL, Ernest G.
299 Riverside Drive
New York 25, N. Y. F 1951

SCHACHTEL, Mrs. Zeborah
299 Riverside Drive
New York 25, N. Y. A 1953

SCHAFER, Roy (Ph.D.)
School of Medicine
Yale University
333 Cedar Street A 1953
New Haven, Conn. F 1955

SCHAFFER, Robert E. (Ph.D.)
Byron Harless and
Associates, Inc.
420 W. Lafayette Street
Tampa, Fla. A 1956

SCHANBERGER, William J.
305 Veri Avenue
Pittsburgh 20, Pa. A 1954

SCHATTMAN, Mrs. Esther
Preger
210 E. 68th Street
New York 21, N. Y. A 1950

SCHAW, Louis C.
Mass. Inst. of Technology
Center for Intl. Studies
50 Memorial Drive
Cambridge 39, Mass. A 1959

SCHER, Sam C. (Ph.D.)
1668 Portland Avenue
St. Paul 4, Minn. A 1956

SCHERER, I. W. (Ph.D.)
Veterans Administration
Northampton, Mass. A 1949

SCHILLINGER, Mrs. Beverly
Goodman
915 West End Ave., Apt. 50
New York 25, N.Y. A 1956

SCHILLINGER, Morton
441 West End Avenue
New York 24, N. Y. A 1953

*SCHLESINGER, Mrs. Alicia de
Solis 155, VIII/A A 1940
Buenos Aires, Argentina

SCHMALZRIED, Newell T.
(Ph.D.)
412 S. Boots St.
Marion, Ind. A 1956

SCHMIDL, Fritz (M.S., Dr. Jur.)
6036 Upland Terrace A 1942
Seattle 18, Wash. F 1945

SCHNEIDER, Stanley F. (Ph.D.)
Neuropsychiatric Institute
University Hospital
Ann Arbor, Mich. A 1954

SCHOENHORN, Miss Elizabeth
Rengasse 4
Vienna, Austria

SCHON, Martha (Ph.D.)
853 Riverside Drive
New York 32, N.Y. A 1959

SCHONBAR, Rosalea Ann
(Ph.D.)
30 W. 60th St., Apt. 10H
New York 23, N.Y. A 1943

SCHUBERT, Herman J. P.
Route 2 (Ph.D.)
500 Klein Road
Buffalo 21, N.Y. A 1950

SCHULMAN, Doris
10 Downing Street
New York 14, N. Y. A 1948

SCHULMAN, Irving (Ph.D.)
638 Harvard Road
Cynwyd, Pa. A 1952

SCHUMACHER, Audrey Sims
2257 Northwest 11th Ave.
Gainesville, Fla. F 1949

SCHUMACHER, Henry C.
(M.D.)
2257 Northwest 11th Ave.
Gainesville, Fla. A 1941

SCHWARTZ, Arthur A.
251 Central Park West
New York 24, N. Y. A 1951

SCHWARTZ, Emanuel K.
12 E. 87th St. (Ph.D., D.S. Sc.)
New York 28 A 1949
New York F 1952

SCHWERIN, Mrs. Erna
P. O. Box 105
Lima, Ohio A 1950

SCOTT, Edward M. (Ph.D.)
2905 N.E. 37th St.
Portland, Oregon

SEIDENFELD, Morton A. (Ph.D.)
National Foundation for
Infantile Paralysis
301 East 42nd St. A 1944
New York 17, N.Y. F 1954

SEILER, Mrs. Geraldine F.
1120 Oakland Drive A 1946
Mount Dora, Florida F 1950

SEITZMAN, Daniel
2387 Ocean Avenue
Brooklyn 29, N. Y. A 1949

SELIG, Kalman (Ph.D.)
188 Clinton Avenue
Newark 8, N.J. A 1950

SELZER, Samuel (Ph.D.)
Box 65
Sonyea, N.Y. A 1954

SELZER, Samuel (Ph.D.)
Minnesota Mental Health
Center
Albert Lea, Minn. A 1956

SHACKETTE, Mrs. Sarah Eyre
Box 166
Carmel Valley, Calif. A 1942

SHAH, Saleem A. (Ph. D.)
1030 Kent Avenue
Catonsville 28, Maryland
A 1958

SHAPIRO, David (Ph.D.)
Austen Riggs Foundation
Stockbridge, Mass. A 1950

SHARPE, Susie McMillan (Ph.D.)
46 W. 4th Street
Mt. Vernon, N. Y. A 1948

SHATTER, Florence (Ph.D.)
103 Maple St.
Great Neck, N.Y. A 1957

SHEEHAN, Joseph (Ph.D.)
416 - 21 Place
Santa Monica, Calif. A 1952

SHERMAN, Murray H. (Ph.D.)
350 Central Park West
New York 25, N.Y. A 1956

SHIPMAN, William G. (Ph.D.)
3601 Fifth Avenue
Pittsburgh 13, Pa. A 1956

SHNEIDMAN, Edwin S. (Ph.D.)
11431 Kingsland Avenue
A 1949
Los Angeles 66, Calif. F 1951

SHOBEN, Edward J., Jr. (Ph.D.)
Teachers College
Columbia University
New York 27, N. Y. A 1952

SHOR, Joel (Ph.D.)
121 East 94th Street
New York 28, N. Y. A 1945

**SHULMAN, Harold S. (Ph.D.)**
Mental Health Clinic
501 E. Springfield Ave.
Champaign, Ill. **A 1957**

**SIEGEL, Edward L. (Ph.D.)**
368 Bruce St.
Syracuse 3, New York **A 1950**

**SIEGEL, Joseph H. (Ph.D.)**
11330 Hillcrest Road
Dallas 30, Texas **A 1956**

**SIEGEL, Max (Ph.D.)**
50 Kenilworth Place **A 1949**
Brooklyn 10, N.Y. **F 1956**

**SIEGEL, Miriam G. (Ph.D.)**
57 E. 90th Street **A 1942**
New York 28, N. Y. **F 1949**

**SILVERMAN, Lloyd (Ph.D.)**
680 West End Avenue
New York 25, N.Y. **A 1960**

**SILVERSTEIN, Mrs. Sophie M.**
2301 Kings Highway
Brooklyn 29, N.Y.
**St. Aff. 1956**

**SIMKIN, James S. (Ph.D.)**
435 No. Bedford Drive
Beverly Hills, Calif. **A 1952**

**SIMKINS, Lawrence**
Florida State Univ.
Department of Psychology
Tallahassee, Fla. **St. Aff. 1958**

**SIMON, Maria D. (Ph. D.)**
University of Arkansas
Medical Center,
Little Rock, Ark. **A 1959**

**SINGER, Erwin (Ph.D.)**
33 Dunham Road
Hartsdale, New York **F 1959**

**SINGER, Roland H.**
7895 Mark Dr.
Verona, Pa. **A 1953**

**SISSON, Boyd D. (Ph.D.)**
2237 Darlington Dr.
Forest Acres,
Augusta, Ga. **F 1957**

**SKEELS, Dell**
Humanistic-Social Department
University of Washington
Seattle 15, Wash. **Aff. 1954**

**SLESS, Bernard**
225 Upland Road
Merion, Pa. **A 1952**

**SMITH, Frances (Ph.D.)**
7155 E. Wardlow Road
Long Beach 8, Calif. **A 1955**

**SMITH, James Innes**
**"Craighead"**
**West Fenton, North Berwick**
**East Lothian, Scotland A 1959**

**SMITH, Mrs. Margaret J.**
Wisconsin Diagnostic Center
1552 University Avenue
Madison, Wis. **A 1950**

**SMOLINSKY, Harold J. (Ph.D.)**
Wernersville State Hospital
Wernersville, Pa. **A 1952**

**SNOWDEN, Robert F.**
595 East Colorado St.
Pasadena, Calif. **A 1953**

**SOBOL, Albert L. (Ph.D.)**
308 Betsy Brown Road **A 1949**
Port Chester, N.Y. **F 1954**

**SOMERVILLE, Addison W.**
5439 So. Greenwood Ave.
Chicago 15, Illinois **A 1956**

**SOMMERS, Vita Stein (Ph.D.)**
931 So. Windsor Blvd.
Los Angeles 19, Calif. **A 1946**

**SOSNOFF, Mrs. Miriam** **St. Aff.**
1895 Grand Concourse **1953**
New York 53, N. Y. **A 1955**

**SPANEY, Emma (Ph.D.)**
Queens College
Flushing 67, N. Y. **A 1949**

**SPENCER, Mrs. Betty L.**
1912 18th Street
Huntington, W. Va. **A 1951**

**SPIEGELMAN, J. Marvin (Ph.D.)**
420 North Camden Drive
Beverly Hills, Calif. **A 1953**

**SPIN, Mrs. Lillian**
500 E. 56th Street
Brooklyn 3, N. Y. **A 1950**

**SPINDLER, Mrs. Joan Elizabeth**
1400 Wesmar Drive
Alta Vista
Ottawa, Ont., Can. **A 1948**

**SPIRER, Dr. Jess**
Box 8186, Univ. Guidance
Center
Univ. of Miami
Coral Gables, Fla. **F 1958**

**SPIRES, Alan M. (Ph.D.)**
Provincial Hospital
Saint John, N.B., Can. **A 1954**

**SPRINGER, Florence E.**
370 W. 255th Street
Box 71
Bronx, N.Y.

**STANFORD, Dr. Margaret J.**
Sonoma State Hospital
Eldridge, Calif. **A 1950**

**STANTON, Mrs. Harriet**
15 Livermore Road **A 1942**
Wellesley Hills 82, Mass.

**STAVRIANOS, Mrs. Bertha**
823 Ingleside Place
Evanston, Ill. **A 1943**

**STEEN, Thomas W. (Ph.D.)**
11153 Rosarita Drive
Loma Linda, Calif. **A 1954**

**STEIN, Morris I. (Ph.D.)**
5737 South Drexel Avenue
Chicago, Illinois **F 1959**

**STEINER, Matilda E.**
220 Brookdale Avenue **A 1943**
Newark 6, N. J. **F 1946**

**STEINER, Meta (Ph.D.)**
40-70 Hampton Street **A 1948**
Elmhurst 73, N. Y. **F 1950**

**STEINZOR, Bernard (Ph.D.)**
49 W. 96th Street
New York 25, N. Y. **A 1943**

**STEISEL, Ira M. (Ph.D.)**
The Childrens Unit
Eastern Pa. Psychiatric Instit.
Henry Ave. & Abbottsford
Rd., Phila. 29, Pa. **A 1951**

**STENDEL, Mrs. Kathleen**
Glendon-Westwood Med. Bldg.
1250 Glendon Avenue
Los Angeles 24, Calif. **A 1950**

**STERN, Mrs. Kathryn Werner**
348 East 18th St.
New York 3, N.Y. **A 1952**

**STERNBERG, David**
8130 Brighton 7th Street
Brooklyn 35, N. Y. **St. Aff. 1955**

**STERNE, Spencer B.**
R.R. No. 1, Box 29
Iona, California **A 1953**

**STEWART, Barbara M. (Ph.D.)**
267 S. New Hampshire
Los Angeles 4, Calif. **A 1949**

**STIRLING, Miss Elizabeth**
2024 R. Street, N.W.
Washington 9, D.C.
**St. Aff. 1960**

**STONE, Harold (Ph.D.)**
531 La Cienega Blvd., Rm. 208
Los Angeles 48, Calif. **A 1956**

**STONE, Irving R.**
State Mental Hygiene Clinic
3525 Fourth Avenue
San Diego 3, Calif. **A 1951**

***STONE, L. Joseph (Ph.D.)**
Vassar College **A 1940**
Poughkeepsie, N. Y. **F 1951**

**STONESIFER, Fred A. (Ph.D.)**
State Board of Health
Dover, Dela. **A 1951**

**STOOPS, Mrs. Wanda Rah**
3258 N. New Jersey Street
Indianapolis 5, Ind. **A 1949**

**STOTZ, Marion**
340 W. Enid Drive
Key Biscayna
Miami 49, Fla. **A 1953**

**STRAIT, Bennett**
509 Scott Street
Stroudsburg, Pa. **A 1950**

**STRAUSS, Mrs. Elsa L.**
3819 Dakota Street
Cincinnati, Ohio **A 1951**

**STRUTHERS, Alice Ball (Ph.D.)**
2501 Palos Verdes Drive, N.
Palos Verdes Estates
California **A 1949**

**SULZER, Edward S.**
309 Stonecrest Drive
**St. Aff. 1954**
De Witt 14, N.Y. **A 1958**

**SWIFT, Joan Woodcock (Ph.D.)**
5628 S. Blackstone Avenue
Chicago 37, Ill. **A 1945**

**SYMONDS, Percival M. (Ph.D.)**
106 Morningside Drive **A 1950**
New York 27, N.Y. **F 1951**

**TADA, Dr. Harou**
2-26 Ikeda-machi
Kanazawa-shi
Ishikawa-ken, Japan

**TALLENT, Norman (Ph.D.)**
VA Hospital
Northampton, Mass. **A 1953**

**TANAKA, Mr. Fujio**
3-7 Ishizakakakuba
Kanazawa, Shi
Ishikawa-ken, Japan **A 1959**

**TAULBEE, Earl S. (Ph.D.)**
Veterans Adm. Hospital **A 1953**
Lincoln, Nebraska **F 1955**

**TAYAL, Shanti**
71 Ferry Avenue East,
Detroit 2, Mich. **A 1960**

**TAYLOR, Mrs. Verda**
905 East King St.
Lancaster, Pa. **A 1950**

***TEICH, Mrs. Marianne**
2040 McGraw Avenue
Bronx 62, N.Y. **A 1940**

**TEICHER, Arthur, Dr.**
215 West 88th St.
New York 24, N.Y.

**TEMERLIN, Maurice K.**
Guidance Service **(Ph.D.)**
University of Oklahoma
Norman, Okla. **A 1956**

**TENNEY, Edward Vernon**
**(Ph.D.)**
735 East Holland Ave.
Fresno 4, Calif. **A 1948**

**THETFORD, William N.**
9 E. 78th St. **(Ph.D.)**
New York 21, N.Y. **F 1957**

**THORNTON, Thomas E.**
**(Ph.D.)**
Route 1, Box 489
Waukegan, Illinois **A 1959**

**TOLMACH, Mrs. Regina E.**
16 W. 77th Street
New York 24, N.Y. **A 1949**

**TOMBLEN, Donald (Ph.D.)**
V.A. Hospital
East Orange, N.J. **A 1956**

TOMKINS, Silvan S. (M.D.)
Princeton University
36 College Road
Princeton, New Jersey

TOPPING, Marion Powers
(Mrs. Robert C.)
122 East 22nd Street
New York 10, N.Y. **A 1948**

TOWNSEND, Mrs. Marjorie M.
Plainfield, Vt. **A 1949**

TRACHTMAN, Gilbert M. (Ph.D.)
2941 Carlyle Road
Wantagh, L.I., N.Y. **A 1954**

TREAT, Wolcott C. (Ph.D.)
5027 Campanile Drive
San Diego 15, Calif. **A 1953**

TRIPP, Clarence A. (Dr.)
The Handwriting Inst.
18 E. 48th St.
New York 17, N.Y. A 1956

TROUP, Evelyn (Ph.D.)
12890 Sunset Blvd. **A 1948**
Los Angeles 49, Calif. **F 1949**

•TUFT, Carlyn M. (Ph.D.)
4613 Larchwood Avenue
Philadelphia, Pa. A 1940

ULLMANN, Dr. Leonard P.
VA Hospital
Palo Alto, Calif. **A 1958**

UMPIERRE, Francisco Jose, Dr.
Department of Health
Stop 51, Roosevelt St. Aff.
Hato Rey, P.R. 1956

VACCARO, J. John (Ph.D.)
105-34 63rd Avenue A 1951
Forest Hills 75, N. Y. F 1955

VAN ALSTYNE, Dorothy
606 Canal Road (Ph.D.)
Sarasota, Florida A 1949

VANDENBERG, Steven G. (Ph. D.)
Mental Health Res. Inst.
Univ. of Michigan
Ann Arbor, Michigan A 1951

VAN WEST, Mrs. Joan
424 E. 14th St., Apt. 3 C
New York 9, N.Y. St. Aff. 1954

VAYHINGER, Dr. John M.
Dept. of Pastoral Psych.
and Counseling
Garrett Biblical Inst.
Northwestern Univ. Campus
Evanston, Illinois **A 1952**

VERRILL, Bernard (Ph.D.)
Department of Psychology
Bradley University
Peoria, Ill. A 1958

VINSON, David (Ph.D.)
1210 Medical Towers
Houston 25, Texas **A 1949**

VOGEL, Horst (Dr.)
Psychosomatische Klinik
Univ. of Heidelberg
Vobstrasse 2, Germany A 1957

VORHAUS, David
27 W. 86th Street
New York 24, N. Y. H. M. 1954

VORHAUS, Pauline G. (Ed.D.)
27 W. 86th Street A 1941
New York 24, N. Y. **F 1944**

WAGNER, Mazie Earle (Ph.D.)
Route 2
500 Klein Road
Buffalo 21, N.Y. **A 1950**

WALTON, Mrs. Norma R.
930 Dart Road, Rt. 3
Mason, Michigan **A 1949**

WARNER, Samuel J. (Ph.D.)
200 East 16th Street
New York 3, N.Y. **A 1953**

WARREN, Lurene Z.
Mt. Pleasant State Home &
Training School
Mt. Pleasant, Mich. A 1949

WARSHAWSKY, Mrs. Florence
2889 Torrington Road A 1949
Shaker Heights 22, Ohio

WATERS, Thomas J.
812 S. Edgewood
Columbia, Mo. St. Aff. 1955

WATKINS, Roberta Frank
533 San Marino
San Marino, Calif. St. Aff. 1955

WEINSTEIN, Dr. Marvin S.
1837 E. Medlock Drive
Phoenix, Arizona **A 1958**

WEIR, John R. (Ph.D.)
2841 Highview Avenue
Altadena, Calif. A 1954

WEISS, Bertram A. (Ph.D.)
VA Hospital
Alexandria, La. A 1956

WEISS, Emalyn R.
733 N. 3rd Street
Reading, Pa. A 1950

WEISS, Herman R. (Ph.D.)
1277 E. 48th Street
Brooklyn 34, N. Y. **A 1953**

WEISS, Sheldon W. (Ph.D.)
604 Clearview Ave.
Wycliff
Wilmington 3, Dela. A 1951

WEISSKOPF-JOELSON, Edith
Dept. of Psychology (Ph.D.)
Purdue University A 1943
Lafayette, Ind. **F 1951**

WELLS, Frederick Lyman (Ph.D.)
87 School Street H.M. 1950
Belmont 78, Mass.

WENGATE, Pauline (Ph.D.)
2321 Crescent Avenue
Charlotte 7, N.C. **A 1950**

WENTWORTH-ROHR, Ivan
Penthouse B (Ph.D.)
51 Fifth Avenue
New York 3, N.Y. **A 1950**

WERNER, Mr. Henry Clay
204 Eighth Ave.
New York 11, N.Y. A 1958

WERTHEIMER, Rita (Ph.D.)
33 Van Wart Avenue
White Plains, N.Y. **A 1955**

WEXLER, Rochelle M.
Apt. 6 D
150 Pelham Road
New Rochelle, N.Y. **A 1949**

WHITE, Mrs. Helen Cecelia
1025 Worsham Drive
Whittier, Calif. A 1950

WHITMAN, Mrs. Dorothy
3905 Winding Way
Cincinnati 29, Ohio
St. Aff. 1956

WHITMAN, Roy M. (M.D.)
3905 Winding Way
Cincinnati 29, Ohio **A 1954**

WHITSELL, Leon J. (M.D.)
52 Shore View Avenue A 1942
San Francisco 21, Calif.

WICKERSHAM, Francis (Ph.D.)
U.S.P.H.S.H.
Fort Worth, Texas **A 1952**

WIGDOR, Blossom T. (Ph.D.)
4552 Lacombe Avenue
Montreal 26, Quebec, **A 1949**
Canada **F 1956**

WILCOTT, Johanna Becker (Ph.D.)
Nebraska Psychiatric Inst.
6025 44th St.
Omaha 5, Nebraska

WILDE, Dr. Guido
Apartado Aereo 6651
Bogota, Colombia, S.A. **A 1955**

WILENSKY, Harold (Ph.D.)
18 Essex Place
Hartsdale, New York A 1960

WILKINS, Mrs. Verna M.
Mother Goose Nursery School
9500 Warren Street
Silver Springs, Md. A 1950

WILLIAMS, Gertha (Ph.D.)
17211 Buckingham Dr. A 1944
Birmingham, Mich. **F 1949**

WILLIAMS, Helen E. (Ed.D.)
210 W. 70th Street
New York 23, N. Y. A 1950

WILLIAMS, Mrs. Jessie M.
Griffins
Abinger Hammer
Nr. Dorking, England A 1950

WILLIAMSON,
Miss Margaret O.
350 Richmond Terrace
Staten Island 1, N.Y. A 1945

WILSON, Helen Elizabeth
State Mental Hygiene Clinic
1500 North 305
Billings, Mont. S.A. 1958

WILSON, Mary T.
R.D. 1
South Salem, N.Y. **A 1944**

WINER, Harold R. (Ph.D.)
8215 Westchester Drive
Dallas 25, Texas A 1956

WITZEMAN, S. Evangeline
5021 Hawkins Road (Ph.D.)
West Richfield, Ohio A 1952

WOLF, S. Jean (Ph.D.)
220 Fifth Avenue
New York 1, N. Y. A 1944

•WOLFSON, Mrs. Ruth
124 W. 79th Street
New York 24, N. Y. **F 1940**

WOLPE, Zelda S. (Ph.D.)
435 North Bedford Drive
Beverly Hills, Calif. A 1950

WOLTMANN, Adolf G.
1364 Lexington Ave.
New York 28, N. Y. A 1949

WOOD, Austin B. (Ph.D.)
810 E. 19th Street
Brooklyn 30, N. Y. A 1943

WOOLF, Henrietta K.
3345 Dent Place, N.W.
Washington 7, D.C. A 1950

WRAY, Beulah K. (Ed.D.)
40 E. 10th Street
New York 3, N. Y. **A 1949**

WRIGHT, M. Erik (M.D.)
Department of Psychology
University of Kansas
Lawrence, Kans. **A 1943**

WRIGHT, Morgan
Medical Arts Clinic A 1955
Regina, Saskatchewan, Can.

WYATT, Frederick (Ph.D.)
1027 E. Huron Street A 1948
Norfolk, Neb. **A 1957**

WYLIE, Alexander
Box 902
Norfolk State Hosp. St.Aff. 1956
Ann Arbor, Mich. **F 1949**

YADOFF, Bernard
5651 Munhall Road
Pittsburgh 17, Pa. **A 1958**

YANG, Andrew T. (Ph.D.)
106 Eileen Drive
Pontiac, Michigan A 1957

ZACHMANN, Mrs. Esther
Apartado Aereo 40-84 St. Aff.
Bogota, Colombia, S.A. 1956

ZEEV, Bracha
333 McDonald Ave.
Brooklyn, N.Y. A 1959

ZEICHNER, Abraham M. (Ph.D.)
57 Northside Road
North Haven, Conn. F 1955

ZIERER, Ernest (Ph.D.)
42-05 Layton Street
Elmhurst, L. I., N. Y. A 1952

ZIMET, Carl N. (Ph.D.)
333 Cedar Street
New Haven, Conn A 1959

ZIMMERMAN, Irla Lee (Ph.D.)
8536 Saturn Street
Los Angeles 35, Calif. A 1949

ZUCKER, Luise J. (Ph.D.)
276 Riverside Drive A 1945
New York 25, N. Y. F 1950

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Springer, Florence E.
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Hinds, Edith A.
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Levinger, Leah
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Parker, Rolland
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Siegel, Max
Silverstein, Sophie M.
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Wood, Austin B.
Zeev, Bracha

*Buffalo*
Fischer, L. K.
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Wagner, Mazie E.

*Elmhurst*
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Vaccaro, J. John

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*Hartsdale*
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Wilensky, Harold

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Lee, Dorothy

*Larchmont*
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*New Rochelle*
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Bellak, Leopold
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Blum, Lucille Hollander
Boles, Glen
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Burchard, Edward M. L.
Burgemeister, Bessie B.
Calabresi, Renata
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Carr, Arthur C.
Carroll, Clara
Chu, Thomas W.
Cohen, Mathilde Weill
Cowin, Marion
Davidson, Helen H.
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Feuerburgh, Joseph
Fine, Reuben
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Gaudet, Frederick J.
Getoff, Louis
Ginandes, Janet
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Gordon, Thelma
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Gurevitz, Saul
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